Tender Notice No: 1/380/GEDA/22-23/SPVRT-DH/ 510 Date : 26/09/2022

BID DOCUMENT

FOR

Design, Supply, Installation, Testing, Commissioning of aggregated capacity of 1200kWp Grid Connected Solar Rooftop PV Power Plants including Operation and Maintenance for 5 years at North Goa & South Goa District Hospital

Goa Energy Development Agency
5th Floor, Goa IDC-Building,
Patto, Panaji, Goa-403001
Tel: 0832-2437401/02
e-mail: ms-geda.goa@gov.in

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TENDERNOTICE

Tender Notice No: 1/380/GEDA/22-23/SPVRT-DH/ 510 Date : 26/09/2022

Member Secretary, Goa Energy Development Agency (GEDA), Panaji invites the tender for complete Design, Supply, Installation, Testing and Commissioning of aggregated capacity of 1200kWp Grid Connected Solar Rooftop PV Power Plant including Operation and Maintenance for 5 years at North Goa & South Goa District Hospital, Goa.

<table>
<tr><th>Name of the Work</th><th>Estimated Cost (Rs.)</th><th>Earnest Money Deposit (Rs.)</th><th>Cost of Tender document (Rs.)</th><th>Tender Processing Fee (Rs.)</th></tr>
<tr><td rowspan="2">Design, Supply, Installation, Testing and Commissioning of Grid Connected Solar Rooftop PV Power Plants including Operation and Maintenance for 5 years at;</td><td rowspan="2"></td><td colspan="3">Mode of payment: e-payment only</td></tr>
<tr><td rowspan="4">15,05,574.00</td><td rowspan="4">2000.00 + GST 18%</td><td rowspan="4">0.2% of the Estimated Tender Value

OR

Maximum Rs.6000.00</td></tr>
<tr><td>1. 600kW at North Goa District Hospital, Mapusa, Bardez, Goa.</td><td>3,72,80,880.00</td></tr>
<tr><td>2. 600kW at Hospicio South Goa District Hospital, Margao, Salcete, Goa.</td><td>3,79,97,820.00</td></tr>
<tr><td>Total</td><td>7,52,78,700.00</td></tr>
</table>

The cost of Tender Document, Earnest Money (EMD) and the Tender Processing Fee shall be paid via e-payment mode. The detailed notice, eligibility criteria and tender document can be downloaded from https://eprocure.goa.gov.in . Any further notice/information related to this tender shall be uploaded on online mode. GEDA reserves the right to reject any or all bids without assigning any reason thereof.

Details of Tender Schedule of e-bid

1. The last date of online submission of tender is 20/10/2022 upto 10:00 hrs.
2. Pre – bid meeting / clarification meeting is 11/10/2022 at 11.00 hrs at GEDA Office.
3. The date & time of opening of online technical Bid is 21/10/2022 after 10:30 hrs in the office of the Member Secretary, Goa Energy Development Agency (GEDA), Panaji.

Note: In case of any Holiday on the scheduled day, same time on the next working day shall be considered unless notified.

Online mode of submission of Technical and Financial Bid is mandatory. Manual submission of any bid will not be accepted and will be rejected without any notice thereof.The bidder should scan & upload all the documents on the e-procure website i.e. https://eprocure.goa.gov.in If the Bidder fails to submit the (online) required documents as above, the bidder is likely to be rejected at the discretion of the Member Secretary, GEDA, Panaji, Goa.

Sd/-
Member Secretary, GEDA

DISCLAIMER

1. Though adequate care has been taken while preparing the Tender document, the Bidders shall satisfy themselves that the document is complete in all respect. Intimation regarding any discrepancy shall be given to this office immediately. If no intimation is received from any Bidder within Ten (10) days from the date of notification of Tender Notice/ issuance of e-Tender documents, it shall be considered that the document is complete in all respect and has been received / acknowledged by the Bidder(s).
2. GEDA reserves the right to modify, amend or supplement this document at any time.
3. While this tender document has been prepared in good faith, neither GEDA nor their employees or advisors make any representation or warranty, express or implied, or accept any responsibility or liability, whatsoever, in respect of any statements or omissions herein, or the accuracy, completeness or reliability of information, and shall incur no liability under any law, statute, rules or regulations as to the accuracy, reliability or completeness of this document, even if any loss or damage is caused by any act or omission on their part.

Place: Panaji, Goa Date: 26/09/2022

INTERPRETATIONS

1. Words comprising the singular shall include the plural & vice versa.
2. An applicable law shall be construed as reference to such applicable law including its amendments or re-enactments from time to time.
3. A time of day shall save as otherwise provided in any agreement or document be construed as a reference to Indian Standard Time.
4. Different parts of this contract are to be taken as mutually explanatory and supplementary to each other and if there is any differentiation between or among the parts of this contract, they shall be interpreted in a harmonious manner so as to give effect to each part.
5. The table of contents and any headings or sub headings in the contract has been inserted for case of reference only & shall not affect the interpretation of this agreement.

PARTICULARS OF TENDER

Sr. No.	Particulars	Details
1	Tender Notice No.	1/380/GEDA/22-23/SPVRT-DH/ 510 date : 26/09/2022
2	Particulars of the works	Design, Supply, Installation, Testing and Commissioning of aggregated capacity of 1200kWp Grid Connected Solar Rooftop PV Power Plants including Operation and Maintenance for 5 years at North Goa & South Goa District Hospital.
3	Capacity of the Solar PV Power Plant	1200kWp (600kWp + 600kWp)
6	Cost of tender document	Rs. 2,000.00 + GST 18%
7	Earnest Money Deposit (EMD)	Rs.15,05,574.00
8	Validity of offer for acceptance	180 days from the date of opening of the Tender
9	Place of opening of tender	Office of the Member Secretary, Goa Energy Development Agency (GEDA), Panaji.
10	Security Deposit	3% of the total contract value. The amount is to be deposited by the successful bidders along with acceptance of the offer letter.

Note:

1. The tender document can be obtained from: https://eprocure.goa.gov.in
2. Tender document submitted online will only be considered valid.

DETAILED TENDER NOTICE

Name of Work: Design, Supply, Installation, Testing and Commissioning of aggregated capacity of 1200kWp Grid Connected Solar Rooftop PV Power Plants including Operation and Maintenance for 5 years at North Goa & South Goa District Hospital.

1 INTRODUCTION

1.1 The Goa Energy Development Agency (GEDA) exclusively to undertake all programmes in the field of New and Renewable Energy Sources. The main objective of the GEDA is to implement the centrally funded schemes of Ministry of New & Renewable Energy, Govt of India including those under Public Private Partnership mode and also implementation of State funded schemes related to New & Renewable Energy.

1.2 GEDA calls for Tender for the implementation of Design, Supply, Installation, Testing, Commissioning of aggregated capacity of 1200kWp Grid Connected Solar Rooftop PV Power Plants including Operation and Maintenance for 5 years North Goa & South Goa District Hospital.

1.3 Accordingly, GEDA has envisaged the distribution of the tendered capacity of 1200kWp as under:

Sr. No	List of Buildings	Solar Rooftop capacity (kWp)	Location Type
1	North Goa District Hospital, Mapusa, Bardez, Goa.	600	Rooftop, on the roofing sheet
2	600kW at Hospicio South Goa District Hospital, Margao, Salcete, Goa.	600	Rooftop, on the roofing sheet
	Cumulative Capacity	**1200 kWp**	

1.4 The Bidder is advised to read carefully all instructions and conditions appearing in this document and understand them fully. All information and documents required as per the bid document must be furnished. Failure to provide the information and / or documents as required may render the bid technically unacceptable.

1.5 The bidder shall be deemed to have examined the bid document, to have obtained his own information in all matters whatsoever that might affect carrying out the works in line with the scope of work specified elsewhere in the document at the offered rates and to have satisfied himself to the sufficiency of his bid. The bidder shall be deemed to know the scope, nature and magnitude of the works and requirement of materials, equipment, tools and labour involved, wage structures and as to what all works he has to complete in accordance with the bid documents irrespective of any defects, omissions or errors that may be found in the bid documents.

2 ELIGIBILITY CRITERIA

2.1 Bidder must meet the eligibility criteria and should necessarily be GEDA empanelled vendor for Grid Connected Rooftop Solar Power Plants and his registration should be valid during the date of submission of Tender bid. The Bidder will be declared as technically qualified, based on meeting the eligibility criteria and as demonstrated based on documentary evidence submitted by the Bidder in the Bid.

2.2 The Bidder should meet the eligibility criteria in following manner:

2.2.1 The Bidder must be GEDA empanelled vendor for Grid Connected Rooftop Solar Power Plants.

2.2.2 Bidder should have experience of designing, fabrication, supply, installation, testing & commissioning of solar PV grid tied systems.

2.3 Technical Eligibility Criteria: The Technical Eligibility Criteria for various sub-categories are as follows:

2.3.1 Bidders from Category Small, Medium & Large from the list of empanelled vendors can participate in the tender.

2.3.2 The bidder should have designed, supplied, installed and commissioned Grid connected Solar PV Power Projects having minimum capacity of 200kW at single location or 02 numbers of 150kW and a cumulative capacity of more than 1000 kWp during last three (03) years from the last date of submission of Bid. Only commissioned projects shall be considered.

2.3.3 Eligible bidder has to submit the quotes for all systems.

2.3.4 The bidder has to submit their technical & financial bids through online mode depending upon their eligibility criteria only.

2.3.5 Documents Required: Bidder should submit the list of projects undertaken in last three year as per the format given in Annexure-VIII along with copy of Work Order and Commissioning Certificate issued by the Client/Owner.

2.4 Financial Eligibility Criteria: The Financial Eligibility Criteria for various sub-categories are as follows:

2.4.1 The bidder must have a minimum average annual turnover of Rs.1,00,00,000.00. Certificate of CA mentioning Financial Turnover of last (two) years. **There is no need to upload entire voluminous balance sheet.**

2.4.2 For the purposes of meeting financial requirements, only standalone audited annual accounts of the Bidder shall be used.

3 SCOPE OF WORK

3.1 Designing, engineering, supply, installation, testing & commissioning of aggregated capacity of 1200kWp Grid Connected Solar Rooftop PV Power Plant at North Goa and South Goa District Hospital including comprehensive Operation & Maintenance (O & M) for period of Five (5) Years from the date of connection of bidirectional meter.

3.2 The successful bidder has to take approval for each separate electrical connection for interfacing the Project with Grid/Electrical Loads from distribution licensee and State Electrical Inspector for interfacing the solar power system with DG during the failure of grid voltage.

3.3 Comprehensive O&M for five (5) Operational years should be required to be carried out from the date of installation of bidirectional meter by Electricity Department.

3.4 The detailed work would involve (include but not limited to) following major activities:

3.4.1 Successful bidder shall submit project documents to GEDA as below to get go ahead for the project:

I. Proposed design for identified building/project

II. Provisional approval from concerned Goa Electricity Department for grid connectivity

3.4.2 Successful bidder shall prepare route profile drawing along with electrical connection to consumer(s). Bidder shall also prepare structural drawing.

3.4.3 Bill of material shall include PV plant, inverter, distribution boards (AC and DC), cable, combiner box and associated work including protection and monitoring arrangements etc.

3.4.4 A successful bidder shall provide a suitable railing for solar installation on the roofing sheet and also proper FRP grated walkway for the safety of personnel during the Operation & Maintenance (O&M) purpose. The size of the walk way should minimum of 300 mm width and 35 mm height. Also safety life line wire of suitable size to be provided at both the sites so that the O&M personnel should withstand during the O&M of system.

3.4.5 **The bidder should submit detailed structural design & drawing of all the sites at GEDA Office within the 15 days after the issue of Work Order or alongwith acceptance of Work Order. The drawing once approved by GEDA then only should be considered for execution.**

3.4.6 All installation works should comply Technical Specifications of Grid connected Rooftop and Small Solar PV Power Plant as mentioned in Section-6.

3.4.7 The Project cost shall include all the costs related to above Scope of Work. Bidder shall quote for the entire facilities on a “single responsibility” basis such that the total Bid Price covers all the obligations mentioned in the Bidding Documents in respect of Design, Supply, Erection, Testing and Commissioning including Warranty, Operation & Maintenance, goods and services including spares required if any during O&M period.

3.4.8 The successful bidder has to take all permits, approvals and licenses, insurance etc. and such

other items & services required to complete the scope of work mentioned above.

3.4.9 Performance Acceptance Tests after installation & Commissioning have to be conducted as per Clause No.7.11.

3.4.10 **Metering :** Metering and grid connectivity of the roof top solar PV Power Plant under this scheme would be Net Metering in accordance with the prevailing guidelines of Goa Electricity Department and/or Central Electricity Authority (CEA)/ Joint Electricity Regulatory Commission for the State of Goa and Union Territories (JERC).

3.4.11 The cost of solar & net-meters and submission of application in concerned Goa Electricity Department's office, follow-up & liaison, enhancement of electrical load, etc. shall be in the scope of successful bidder.

3.4.12 Successful bidder shall provide Technical Manual, User Manual and Operation and Maintenance (O&M) Manual of the plant to the beneficiary in English

3.4.13 Any other works though not specifically mentioned but are required to finish the project in all respects for its safe, reliable, efficient and trouble free operation shall also be included and the same shall be supplied and installed by the bidder without any extra cost.

3.4.14 **Clean up:** Upon completion of the Work, the contractor shall remove from the vicinity of the work all residues, building rubbish, unused materials, concrete forms and other like materials belonging to him or under his direction during construction to the satisfaction of beneficiary and in the event of his failure to do so within 15 days from the date of commissioning. The cost on account of clean up shall be included in the quoted rate and no additional extra claim shall be entertained.

3.5 Conditions of Contract:

3.5.1 **Sanctioned Period:** Total sanctioned period for obtaining No Objection Certificate (NOC) from the Office of Electricity Department's and Electrical Inspector for grid connectivity, complete design, engineering, supply, storage, civil work, installation, testing & commissioning of the grid connected rooftop solar PV projects shall be 180 days for the installation of aggregated capacity of 1200kWp solar power plant from the date of issue of work order excluding the 04 months of monsoon season (June to September). Commissioning shall mean 'installation of Net Meter and successful operation of the Project/Works by the Developer, for the purpose of carrying out **Performance Ratio (PR) Test**.

3.5.2 If the supplier fails to commission the sanctioned project within specified time, penalty of 2% of the value of the Security Deposit will be deducted for every day of delay for the next 30 days. If the supplier further delays than the project will get cancelled and the balance Security Deposit amount would be forfeited. In such case supplier will be liable for black listing by the GEDA.

3.5.3 If the project does not complete in 06 months respectively (Allowed time period for execution of additional one month) from the date of issue of Work Order or does not start within 30 days from the date of issue of Work Order, may lead to Premature Termination of Contract.

3.6 However, GEDA reserves right to modify above schedule on case to case basis as per requirement of the project at its sole discretion.

3.7 Scope of Comprehensive O&M Activities: The Comprehensive O&M schedule shall include (but not limited to) the following mentioned activities:

3.7.1 Solar Modules:

(i) Visual inspection of modules and mounting clamps
(ii) Washing and cleaning of modules and structures
(iii) Check modules for any broken glass/ discoloration, misaligned modules

3.7.2 Module mounting structure:

(i) Visual inspection of mounting structures, screws and fasteners
(ii) Tightening of screws and fasteners as needed.

3.7.3 Junction Box:

(i) Checking and tightening of solar inter connections
(ii) Visual inspection of junction boxes and wiring
(iii) Tightening of any interconnections as needed

3.7.4 Inverters:

(i) General Cleaning
(ii) Check LCD displays of inverters
(iii) Check integrity of wiring
(iv) Visual inspection of mechanical fixings of inverters

3.7.5 Cables:

(i) Visual inspection of DC and AC cables
(ii) Replacement of cables if damaged.

3.7.6 Remote Monitoring

(i) All the Solar Power Plants should have suitable inbuilt or external instrumentation for web based remote monitoring of its Status.

(i) For every solar power system, a solar generation meter should be installed having the AMR facility alongwith Modem for communication purpose, as per Goa Electricity Department Guidelines, which can display voltage, current, instantaneous power, energy generation in kWp. SIM card alongwith data usage should be provided for communication purpose.

(ii) Power Plants shall be capable of transmitting its monitorable parameters over GSM/CDMA/GPRS/TCP IP Network and conform to respective standard protocols.

(iii) The Power Plants shall also have suitable Data Logging & Storage capacity for at least 7 days event logs.

(iv) **The systems should also be able to be monitored in the internet at any time. The Internet connection for the same has to be provided by the successful bidder free of cost till the O&M period of 5year**.

3.8 Insurance:

3.8.1 The successful bidder shall take Insurance for transit-cum-storage-cum-erection for all the materials to cover all risks and liabilities for supply of materials on site basis, storage of

materials at site, erection, testing and commissioning.

3.8.2 The successful bidder shall also take appropriate insurance of the 1200kWp solar power plant for 05 years from the date of commissioning.

3.8.3 The successful bidder shall also take insurance for Third Party Liability covering loss of human life, engineers & workmen and also covering the risks of damage to the third party/ material/ equipment/ properties during execution of the contract. Before commencement of the work, the bidder will ensure that all its employees and representatives are covered by suitable insurance against any damage, loss, injury or death arising out of the execution of the work or in carrying out the contract. Liquidation, Death, Bankruptcy etc., shall be the responsibility of bidder.

3.9 Warrantees and Guarantees:

3.9.1 The successful bidder shall provide warrantee covering the rectification of any and all defects in the design of equipment, materials and workmanship including spare parts for O&M period. The successful bidder shall provide warranty from the Original Manufacturer for Solar PV panels and Solar Grid Tie Inverter for **Ten (10) years from the date of commissioning**. The SPV module shall be guaranteed life of 25 years. The equipment's or components, or any part thereof, so found defective during 'Operation & maintenance and Warranty' period shall be forthwith replaced free of cost by the successful bidder to the satisfaction of the Member Secretary, GEDA.

3.9.2 **The successful bidder has to transfer all the Guarantees /Warrantees of the different components to the GEDA. All warranties from the manufacturer have to be fully endorsed by the successful bidder. Warranty certificate to the above effect must be furnished along with the commissioning reports to GEDA.**

3.9.3 The performance profile for solar power production for the O&M period should be submitted monthly as well as quarterly to GEDA office regularly. If the said report are not send to GEDA Office regularly than GEDA will assume that the O&M has not been carried out for that month and penalty will be levied as 0.05% per month will be deducted from Performance Bank Guarantee (PBG) submitted by successful Bidder.

3.10 Type & Quality of Materials and Workmanship: The design, engineering, manufacture, supply, installation, testing and performance of the equipment shall be in accordance with latest appropriate IEC/Indian Standards as detailed in the Section-6 (Technical specifications) of the bid document. Where appropriate Indian Standards and Codes are not available, other suitable standards and codes as approved by the MNRE shall be used. The specifications of the components should meet the technical specifications mentioned in Section-6. Any supplies which have not been specifically mentioned in this contract but which are necessary for the design, engineering, manufacture, supply & performance or completeness of the project shall be provided by the successful bidder without any extra cost and within the time schedule for efficient and smooth operation and maintenance of the SPV plant.

3.11 Inspection: Pre-delivery inspection of solar PV modules and other major components may be

carried out by a team of designated officials of GEDA at the developer's facility. GEDA shall have the right to conduct tests to carried out by an independent agency at any point of time, if felt necessary.

3.12 Operation and Maintenance (O&M):

3.12.1 The successful bidder shall be responsible for all required activities for O&M of the Rooftop Solar PV Power Plant for a period of 5 years from the date of installation of Net Meter (Bi-directional Meter) by Electricity Department. During this period, the successful bidder shall be responsible for supply of all spare parts as required from time to time for scheduled and preventive maintenance, major overhauling of the plant, replacement of defective modules, inverters, PCU's etc. and facilitating log sheets for operation detail, deployment of qualified engineers for supervision of work, complaint logging & its attending.

3.12.2 Successful bidder shall be responsible for operation, cleaning, monitoring and maintenance of power plant. Successful bidder shall do quarterly comprehensive O&M of the plant as specified in Clause 3.7. Regular cleaning of SPV panel should be done at every 15 days especially early morning or late evening. Successful bidder shall submit the site visit report and quarterly report as per the format enclosed at Annexure XVI & XVII.

3.12.3 For any issues related to maintenance, a toll-free number/ customer care number/ single point of contact shall be made available to the rooftop owner/ plant owner to resolve within 48 hours. The successful bidder shall attend the complaints and undertake the repairs within 48 hours from the receipt of the complaint telephonically or in writing from the GEDA or from beneficiary. If the complaints are not attended within such stipulated time, then penalty charges at the rate of 0.05% per week of the total cost will be deducted from Bidder Performance Bank Guarantee (PBG). Further, if the successful bidder does not attend complaints within 2 weeks of the time period then the repair work will be carried out by GEDA from any other Manufacturer/Supplier and the respective billing amount will be deducted by GEDA from the PBG of the successful bidder. In such cases the Bidder is also liable to be blacklisted.

3.12.4 In case of equipment including Inverter if the spares are not available or the Inverter cannot be repaired the bidder should replace the faulty equipment with new one at his own cost.

3.12.5 GEDA reserves the right to make surprise checks/ inspection visits at its own or through authorized representative to verify the O&M activities being carried out by the successful bidder. Failure to adhere to the above guidelines will result in penal action including debarring from participation in the next tender of GEDA.

3.12.6 The successful bidder has to provide permanent arrangement for cleaning & washing of the SPV panel's alongwith proper by providing a suitable water pump of 0.5HP, water piping arrangement especially with UPVC pipes and permanent fixed suitable ladder/staircase if required for the cleaning of solar PV panels at all the site. Source of water will be provided by the concerned beneficiary at the respective buildings.

3.13 Metering & Grid Connectivity: Metering and grid connectivity of the roof top solar PV Power

Plant under this scheme would be in accordance with the prevailing guidelines of Goa Electricity Department and/or CEA/ JERC.

3.14 Expected Electrical Energy Generation:

3.14.1 The bidder has to submit an undertaking regarding minimum average expected electrical energy generation of more than 1450 kWh per kWp system on LT side for first 05 years in order to achieve 16.5% Capacity Utilization Factor (CUF). In case of non-availability of grid of other issues outside the prevue of developer, deemed generation will be allowed for assessing the performance of the plant. Deemed generation will be estimated based on previous years generation for the same period. For the 1st year, deemed generation will be estimated based on average of generation of past 30 days.

3.14.2 A maximum of 1% decrease in annual electrical energy generation over previous year generation due to degradation factor of SPV module is allowed from 2nd year onwards. The bidder may indicate the guaranteed electrical energy generation from their system after making proper assessment.

3.14.3 Any deficiency in the generated electrical energy output will be recovered @ Rs.5 per unit from their performance bank guarantee. The assessment for such deficiencies will be made on yearly basis. ***Further, if any deficiency in the generated electrical energy output, the bidder has to increase the number of SPV modules so as to reach up to the minimum electrical energy generation with its own cost.***

Formula to calculate CUF is as below: -

CUF = Actual Plant Output in kWh over the year / (Installed Plant Capacity in kWp x 365 x 24).

3.15 Coordination & Progress Report: Bidder shall inform the name, address, contact number of the Nodal Officer(s), assigned for executing the project, who will report about their fortnightly/ monthly progress & performance of the Project. In case, absence of any information is adversely affecting the progress of work, the issue could be reported to GEDA and Concerned Beneficiary. Bidder shall submit the progress report fortnightly/monthly to GEDA and Concerned Beneficiary in prescribed Performa provided by GEDA. GEDA will have the right to depute its representatives to ascertain the progress of contract at the premises of works of the Bidder or at site. In addition to this, successful bidder should also provide contact details and email id of Management & key Officials of the company. GEDA and Concerned Beneficiary, each will appoint a nodal officer for coordination for project execution.

3.16 Project Inspection: The project progress will be monitored by GEDA and the projects may be inspected for quality at any time during installation / commissioning or after the completion of the project.

3.17 Note: The Scope of work and Conditions of Contract mentioned above is indicative only; However, GEDA reserves the right to add/delete items, relocate project area in scope/nature of work for smooth execution and completion of the project.

4 INSTRUCTIONS TO BIDDERS

4.1 Bidders may in their own interest visit the all sites where the rooftop system to be installed. Goa Energy Development Agency will not be responsible for any incidental or consequential losses of the bidders while execution and till expiry of the period of maintenance.

4.2 Those bidders not registered on the e-procure website mentioned above, are required to get registered beforehand. If needed they can be imparted training on online bidding process as per details available on the website.

4.3 The intending bidders must have / obtain a valid Class-III digital signature to submit the bid.

4.4 Cost of each Tender document: Rs. 2000/- (Rupees Two Thousand only) additional GST of 18% will be extra, to be submitted along with EMD through online.

4.5 EMD equivalent to 2% of the estimated cost shall be submitted.

4.6 Tender without requisite amount of EMD shall be out rightly rejected. Correspondence on request from any Bidder on exemption of EMD will not entertained by GEDA. The units functioning in Goa and registered /acknowledge under the certificates of MSMEs i.e. EM-II/Udyog Aadhar/Udyam Registration are eligible for the exemption of EMD under the Preferential Purchase Incentives for Micro and Small Enterprises Scheme 2008 of Goa Government and its amendments from time to time.

4.7 Validity period: The Tender shall remain valid for the period of 180 days from the date of opening of Tender.

4.8 Required information will be available at the office of Member Secretary, GEDA, on all working days except Saturday, Sunday and Public Holidays declared by the Government of Goa, from the date of sale of tender document till the submission of bid. Completely filled Tender forms will be received online.

4.9 Bidder should submit the Tender documents on or before the date and time specified in the NIT. No hard copies of the tender documents to be submitted in the tender box. However, the lowest Tenderer shall submit all the documents as per Annexure XV.

4.10 Tenders which are quoted more than 20% of the amount put to the tender shall stand rejected.

4.11 All the information furnished and document produced with the Tender shall be in English language only. The Tender notice and Tender document shall form a part of contract agreement.

4.12 Issue/or submission of Tender document does not mean that Bidder is qualified for awarding the work.

4.13 The Bidder shall not remove any page, Annexure etc. from the original tender document.

4.14 The Bidder shall sign and put bidder's stamp on each page of the tender.

4.15 The original tender document shall be submitted with all Annexure's as per procedure for submission of tender on or before due date and time.

4.16 The conditional tenders will be rejected without any notice thereof.

4.17 Member Secretary, GEDA reserves the right to reject/ accept any or all Tender without assigning any reason thereof.

4.18 Incomplete, telegraphic or conditional bids shall not be accepted.

4.19 Bidders are expected to understand interconnection requirements for net-metering Goa Electricity Department and design and approval requirements of State Electrical Inspectorate if any. Financial Proposal submitted is assumed to have considered the cost of interconnection.

4.20 Financial Bid quoted must be binding and fixed. No variation / escalation shall be allowed.

4.21 All pages of the bid documents including General and Commercial Terms & Conditions and Technical must be signed & sealed by the authorized person on behalf of the Bidders and same should be uploaded as per the tender.

4.22 PAN & Valid GST certificate duly attested must be submitted along with the Technical bid.

4.23 Deviations in Terms and Conditions, Specification of material, Inspection clause etc. will not be accepted under normal conditions.

4.24 Earnest money as specified in bid may be submitted via e-payment mode.

4.25 The bidders are required to furnish their offers in the Financial Bid both in words & figures.

4.26 Canvassing in any manner shall not be entertained and will be viewed seriously leading to rejection of the bid.

4.27 PV module should be indigenous. Certificate to the effect must be furnished at the time of submitting project report.

4.28 The bid document should be submitted in two parts as detailed below:

4.28.1 BID - 1, TECHNICAL BID. All the relevant documents of bid documents ***except the price bid*** duly signed should be uploaded in the Technical Bid.

4.28.2 BID - 2, FINANCIAL BID. The Financial Bid should be quoted as per our prescribed format (Annexure - XIII). The Financial Bid should take into account all Taxes, duties, transportation etc. as may be applicable.

4.28.3 GEDA is not responsible for providing Road Permits. Necessary Road permit is to be obtained by the successful bidder at their own cost.

4.29 Any consequences arise during the execution of the project will be the sole responsibility of the successful bidder.

4.30 Any clarification on the technical specification and commercial terms and conditions shall be clarified in writing from GEDA within 7 days before last date of submission of tender.

4.31 Deviation of any Commercial terms and condition and technical specification shall not be entertained under any circumstances and liable for punishable as per Law.

For detailed tender notice and participation please visit the Tender website https://eprocure.goa.gov.in

For details please contact the Member Secretary, Goa Energy Development Agency, Panaji, Goa 0832-2437401/02 , Email : ms-geda.goa@gov.in.

For assistance on e-Tender, please contact 7972871944, 7972854213 Email: e-tender.goa@gov.in.

Sd/-
Member Secretary, GEDA

5 BID OPENING, EVALUATION PROCESS AND CAPACITY ALLOCATION

5.1 Opening and Evaluation of Bids:

5.1.1 Opening of duly submitted technical and financial bids will be through online mode only. The procedure of opening of the bid shall be as under:

5.1.2 **"Technical Bid"** shall be opened at the time & date mentioned in the bid notice by Goa Energy Development Agency in presence of representative of bidders, who is interested to be present.

5.1.3 **"Financial Bid"** shall be opened after evaluation of technical suitability of the offer. The time & date mentioned in the bid notice of new date for opening of Financial Bid shall be communicated subsequently. Financial Bid will be opened of only those bidders who would duly qualify in the Technical Bid.

5.1.4 If due date of receipt / opening of bids happens to be a closed holiday, the bids would be received and opened on the next working day.

5.1.5 GEDA reserves the right to postpone and/or extend the date of receipt/opening of Bids or to withdraw the Tender notice, without assigning any reason thereof. In any such cases, the bidders shall not be entitled to any form of compensation from the Company.

5.1.6 GEDA will scrutinize the technical bid documents submitted by the bidders and shortlist the bidders who qualify based on eligibility criteria, terms and conditions, technical specifications of this tender document.

5.2 The evaluation process comprises the following four steps:

- **Step I - Responsiveness check of Techno Commercial Bid**
- **Step II - Evaluation of Bidder's fulfillment of Eligibility Criteria as per Section 2**
- **Step III - Evaluation of Price Bid**
- **Step IV - Successful Bidders(s) selection**

5.3 Step I - Responsiveness Check of Techno Commercial Bid:

5.3.1 The Techno Commercial Bid submitted by Bidders shall be scrutinized to establish responsiveness to the requirements laid down in the Bid Document. Any of the following may cause the Bid to be considered "Non-responsive", at the sole discretion of GEDA:

a. Bids that are incomplete, i.e. not accompanied by any of the applicable formats inter alia covering letter, power of attorney supported by a board resolution, EMD, etc.;

b. Bid not signed by authorized signatory and /or stamped in the manner indicated in this Tender;

c. Material inconsistencies in the information /documents submitted by the Bidder, affecting the Eligibility Criteria;

d. Technical proposal containing financial proposal will be considered disqualified;

e. Information not submitted in the formats specified in this Tender;

f. Bid being conditional in nature;

g. Bid not received by the Bid Deadline;

h. Tender Evaluation Committee or its affiliate cannot BID;

i. Bidding Company submitting two bids;

j. Bidder delaying in submission of additional information or clarifications sought by GEDA as applicable;

k. Bidder makes any misrepresentation;

5.3.2 Each Bid shall be checked for compliance with the submission requirements set forth in this Tender before the evaluation of Bidder's fulfillment of Eligibility Criteria is taken up. Section 2 shall be used to check whether each Bidder meets the stipulated requirement.

5.3.3 The GEDA will examine the Bids to determine whether they are complete, whether any computational errors have been made, whether required sureties have been furnished, whether the documents have been properly signed and stamped and whether the Bids are otherwise in order.

5.3.4 In case of arithmetical errors, if there is a discrepancy between words and figures, the amount written in words will prevail.

5.4 Step II - Evaluation of Bidder's Fulfilment of Eligibility Criteria:

5.4.1 Evaluation of Bidder's Eligibility will be carried out based on the information furnished by the Bidder as per the prescribed Formats and related documentary evidence in support of meeting the Eligibility Criteria as specified in Section 2 of this Bid Document.

5.4.2 Non-availability of information and related documentary evidence for the satisfaction of Eligibility Criteria may cause the Bid non-responsive.

5.5 Step III - Evaluation of Financial Bid:

5.5.1 The evaluation of Financial Bid shall be carried out based on the information furnished in Financial Bid Format. The Financial Bid submitted by the Bidders shall be scrutinized to ensure conformity with the Tender. Any Bid not meeting any of the requirements of this Tender may cause the Bid to be considered "Non-responsive" at the sole decision of the GEDA.

5.6 Step IV – Successful Bidder(s) Selection:

5.6.1 Bid qualifying in as per Eligibility Criteria shall only be evaluated in this stage.

5.6.2 All Bidders qualifying Eligibility Criteria shall be placed as equal. Technical qualification is must

for a Bidder to become eligible for assessment on financial criteria.

5.6.3 Bidder will be selected based on lowest financial quotes, provided the bidder is qualified for the capacity.

5.6.4 GEDA shall issue letter of allotment (LoA) to the L1 bidder after obtaining the financial expenditure sanction order.

5.6.5 L1 Bidder will be given 15 days from the date of issuance of LoA to give their consent to execute the allotment projects at L1 Quote along with submission of security deposit. In case, L1 bidder failed to provide consent or submit security deposit within the stipulated time, GEDA shall withdraw the capacity from L1 bidder and may blacklist the bidder from future tenders. GEDA would then offer the same capacity to the next lowest bidder at the price quote of L1.

5.6.6 If the successful bidder, to whom Allocation Letter has been issued, does not fulfill any of the conditions specified in bid document, the GEDA reserves the right to annul/cancel the Letter of Award to such successful bidder.

6 TECHNICAL SPECIFICATIONS

6.1 The proposed projects shall be commissioned as per the technical specifications given below. Any shortcomings will lead to cancelation of payment in full or part as decided by GEDA & Competent Authority's Decision will be final and binding on the successful bidder.

NOTE: BIDDER MUST VISIT THE SITES BEFORE QUOTING THE RATES, OTHERWISE IT WILL BE ASSUMED THAT THE PARTY HAS ALREADY VISITED THE SITE BEFORE QUOTING THE TENDER, AN UNDERTAKING TO BE FURNISHED ACCORDINGLY

6.2 Grid Tied Solar Rooftop Photo Voltaic (SPV) power plant: A Grid Tied Solar Rooftop Photo Voltaic (SPV) power plant consists of SPV array, Module Mounting Structure, Power Conditioning Unit (PCU) consisting of Maximum Power Point Tracker (MPPT), Inverter, and Controls & Protections, interconnect cables and switches. PV Array is mounted on a suitable structure Components and parts used in the SPV power plants including the PV modules, metallic structures, cables, junction box, switches, PCUs etc., should conform to the BIS or IEC or international specifications, wherever such specifications are available and applicable. Solar PV system shall consist of following equipment /components:

- Solar PV modules consisting of required number of Crystalline PV modules
- Grid interactive Power Conditioning Unit with Remote Monitoring System
- Mounting structures
- Junction Boxes
- Earthing and lightening protections
- IR/UV protected PVC Cables, pipes and accessories

6.2.1 Solar Photovoltaic Modules:

a. The PV modules used should be made in India.

b. The PV modules used must qualify to the latest edition of IEC PV module qualification test or equivalent BIS standards Crystalline Silicon Solar Cell Modules IEC: 61215/IS: 14286. In addition, the modules must conform to IEC: 61730 Part-2 requirements for construction & Part-2 requirements for testing, for safety qualification or equivalent IS.

- For the PV modules to be used in a highly corrosive atmosphere throughout their lifetime, they must qualify to IEC: 61701/IS: 61701.
- The installation of total DC solar PV array capacity can exceed allocated capacity (kWp) at each site. The installation of total DC solar array capacity less than the allocated capacity at each site will not be acceptable. The solar PV module should comprise of Mono crystalline PERC Half Cut cell based having 144 number of cells in the module and capacity of each solar PV module should be ≥540Wp. Solar PV panel <540Wp will not be acceptable and if supplied, solar PV panels will be rejected.
- Protective devices against surges at the PV module shall be provided. Low voltage drop by pass diodes shall be provided.
- PV modules must be tested and approved by one of the IEC authorized test centers.

- The module frame shall be made of corrosion resistant materials, preferably having anodized aluminium

c. The bidder shall carefully design & accommodate requisite numbers of the modules to achieve the rated power in his bid. GEDA shall allow only minor changes at the time of execution.

d. Other general requirement for the PV modules and subsystems shall be the following:

I. The rated output power of any supplied module shall have tolerance of +/- 3%.

II. The peak-power point voltage and the peak-power point current of any supplied module and/or any module string (series connected modules) shall not vary by more than 2 (two) per cent from the respective arithmetic means for all modules and/or for all module strings, as the case may be.

III. The module shall be provided with a junction box with either provision of external screw terminal connection or sealed type and with arrangement for provision of by-pass diode. The box shall have hinged, weather proof lid with captive screws and cable gland entry points or may be of sealed type and IP-65 rated.

IV. I-V curves at STC should be provided by bidder.

e. Modules deployed must use a RF identification tag. The following information must be mentioned in the RFID used on each module (This can be inside or outside the laminate but must be able to withstand harsh environmental conditions).

- Name of the manufacturer of the PV module
- Name of the manufacturer of Solar Cells
- Month & year of the manufacture (separate for solar cells and modules)
- Country of origin (separately for solar cells and module)
- I-V curve for the module Wattage, Im, Vm and FF for the module
- Unique Serial No. and Model No. of the module
- Date and year of obtaining IEC PV module qualification certificate
- Name of the test lab issuing IEC certificate

f. Other relevant information on traceability of solar cells and module as per ISO: 9001 and ISO: 14001.

g. Warranties:

- **Material warranty:**

I. Material Warranty is defined as: The manufacturer should warrant the Solar Module(s) to be free from the defects and/or failures specified below for a period not less than 10 years from the date of commissioning.

II. Defects and/or failures due to manufacturing.

III. Defects and/or failures due to quality of materials

IV. Non conformity to specifications due to faulty manufacturing and/or inspection processes. If the solar Module(s) fails to conform to this warranty, the manufacturer will repair or replace the solar module(s), at the Owners sole option

- **Performance warranty:** The predicted electrical degradation of power generated not exceeding 20% of the minimum rated power over the 25 years' period and not more than 10% after ten years' period of the full rated original output.

6.2.2 Array Structure:

a. The structure design should be as per the slope of the tin shed.

b. The inclination angle of the structure can be Parallel to the tin shed (flat keeping zero-degree tiling angle), if the slope of shed in Proper south direction.

c. Anodised aluminium or equivalent structure should be used for installing the solar PV panels on the metal roofing sheets.

d. Puncturing of RCC roof is not allowed for erecting the solar structure. Bidder should design & erect the solar structure without damaging to the RCC roof. Preferably bidder should use a special adhesive bond for erecting the solar structure and an additional RCC block should be provided for strengthening the solar structure. Latest design of solar structure on the RCC roof, if available, may also be quoted with detailed description.

e. No damage in any way should be caused to the buildings while carrying out the material on the roof for installation of Solar PV panels or any other equipment. If any damage done it will wholly be the responsibility of the bidder and cost shall be recovered from the bidder.

f. The bidder should use seam clamps of extruded aluminium for the installation of solar PV panels to be fitted on the metal sheets. Suitable railing should be provided for the safety purpose. A proper walkway should be provided for the operation & maintenance purpose for the entire roof where the solar PV panels will be installed.

g. The Mounting structure shall be so designed to withstand the wind speed of up to 150km/hour. It may be ensured that the design has been certified by a recognized Lab/ Institution in this regard and submit wind loading calculation sheet to GEDA. Suitable fastening arrangement such as grouting and calming should be provided to secure the installation against the specific wind speed.

h. The mounting structure steel shall be as per latest IS: 2062 (1992) and galvanization of the mounting structure shall be in compliance of latest IS: 4759.

i. Structural material shall be corrosion resistant and electrolytically compatible with the materials used in the module frame, its fasteners, nuts and bolts. Aluminium structures can also be used which can withstand the wind speed of respective wind zone. Necessary protection towards rusting need to be provided either by coating or anodization.

j. All bolts, nuts, fasteners shall be of stainless steel of grade SS 304 or hot dip galvanized, panel mounting clamps shall be of aluminium and must sustain the adverse climatic conditions. Structural material shall be corrosion resistant and electrolytically compatible with the materials used in the module frame, its fasteners, nuts, and bolts.

k. The module mounting structures should have angle of inclination as per the site conditions to take maximum insolation and complete shadow-free operation during generation hours. However, to accommodate more capacity the angle of inclination may be reduced until the plant meets the specified performance ratio requirements.

l. The module mounting structures should have angle of inclination as per the site conditions to take maximum insolation and complete shadow-free operation during generation hours. However, to accommodate more capacity the angle of inclination may be reduced until the

plant meets the specified performance ratio requirements.

m. Suitable fastening arrangements such as grouting, and calming should be provided to secure the installation against the specific wind speed. The Inspecting Agency shall ensure that the SPV System withstand high wind velocity within the guarantee period as per technical specification.

n. The structures shall be designed to allow easy replacement of any module. The array structure shall be so designed that it will occupy minimum space without sacrificing the output from the SPV panels.

o. Adequate spacing shall be provided between two panel frames and rows of panels to facilitate personnel protection, ease of installation, replacement, cleaning of panels and electrical maintenance.

p. The structure shall be designed to withstand operating environmental conditions for a period of minimum 25 years.

q. The total load of the structure (when installed with PV modules) on the roof should be less than 50 kg/m2/kW.

r. The minimum clearance of the lowest point from the tin shade should be more than 100mm.

s. The base of the structure should be connected on the Purlin of the tin shed with the proper riveting.

t. All structure members should be of minimum 2 mm thickness.

6.2.3 Junction Boxes:

a. The junction boxes are to be provided in the PV array for termination of connecting cables. The Junction Boxes (JBs) shall be made of GRP/FRP/Powder Coated aluminium /cast aluminium alloy with full dust, water & vermin proof arrangement. All wires/cables must be terminated through cable lugs. The JBs shall be such that input & output termination can be made through suitable cable glands. Suitable markings shall be provided on the busbars for easy identification and cable ferrules will be fitted at the cable termination points for identification.

b. Copper bus bars/terminal blocks housed in the junction box with suitable termination threads Conforming to IP 65 or better standard and IEC 62208 Hinged door with EPDM rubber gasket to prevent water entry, Single /double compression cable glands should be provided.

c. Polyamide glands and MC4 Connectors may also be provided. The rating of the junction box shall be suitable with adequate safety factor to interconnect the Solar PV array

d. Junction boxes shall be mounted on the MMS such that they are easily accessible and are protected from direct sunlight and harsh weather.

e. Suitable markings shall be provided on the bus bar for easy identification and the cable ferrules must be fitted at the cable termination points for identification.

6.2.4 DC Distribution Board:

a. DC Distribution Boxes are to be provided to receive the DC output from the PV array.

b. DCDBs shall be dust & vermin proof compliant having IP 65 or better protection, as per site conditions.

c. The bus bars are made of EC grade copper of required size. Suitable capacity MCBs/MCCB shall be provided for controlling the DC power output to the inverter along with necessary surge arrestors. MCB shall be used for currents up to 63 Amperes, and MCCB shall be used for currents greater than 63 Amperes.

6.2.5 AC Distribution Panel Board:

a. AC Distribution Panel Board (DPB) shall control the AC power from PCU/ inverter and should have necessary surge arrestors. Interconnection from ACDB to mains at LT Bus bar while in grid tied mode.

b. All switches and the circuit breakers, connectors should conform to IEC 60947, part I, II and III/ IS60947 part I, II and III.

c. The changeover switches (if required), cabling work should be undertaken by the bidder as part of the project.

d. All the Panel's shall be metal clad, totally enclosed, rigid, floor mounted, air - insulated, cubical type suitable for operation on three phase / single phase, 415 or 230 volts, 50 Hz.

e. The panels shall be designed for minimum expected ambient temperature of 45°C, 80% humidity and dusty weather.

f. All indoor panels will have protection of IP54 or better. All outdoor panels will have protection of IP65 or better.

g. Should conform to Indian Electricity Act and rules (till last amendment).

h. All the 415V AC or 230 Volts devices / equipment like bus support insulators, circuit breakers, SPDs, VTs etc., mounted inside the switchgear shall be suitable for continuous operation and satisfactory performance under the following supply conditions:

Variation in Supply Voltage	As per CEA/JERC
Variation in Supply Frequency	As per CEA/JERC

6.2.6 PCU / Array Size Ratio:

a. The combined wattage of all inverters should not be less than rated capacity of power plant under Standard Test Conditions.

b. Maximum power point tracker shall be integrated in the PCU/inverter to maximize energy drawn from the array.

6.2.7 PCU / Inverter: As SPV array produce direct current electricity, it is necessary to convert this direct current into alternating current and adjust the voltage levels to match the grid voltage. Conversion shall be achieved using an electronic Inverter and the associated control and protection devices. All these components of the system are termed the "Power Conditioning Unit (PCU)". In addition, the PCU shall also house MPPT (Maximum Power Point Tracker), an interface between Solar PV array & the Inverter. The power conditioning unit/inverter should also be DG set interactive. Inverter output should be compatible with the grid frequency. Typical

technical features of the inverter shall be as follows:

Switching devices	IGBT/MOSFET
Control	Microprocessor/DSP
Nominal AC output voltage & frequency	415V, 3 Phase, 50 Hz.
Output frequency	50 Hz
Grid frequency synchronization range	+3 Hz or more
Ambient temperature considered	-20°C to 50°C
Humidity	95% Non-condensing
Protection of enclosure	IP-20 (Minimum) for indoor IP-65 (Minimum) for outdoor
Grid frequency tolerance range	+3 Hz or more
Grid voltage tolerance	-20% to +15%
No-load losses	Less than 1% of rated power
Inverter efficiency (Minimum)	>93% (In case of 10kW or above) >90% (In case of less than 10kW)
THD	<3%
PF	>0.9

a. Three phase PCU/ inverter shall be used with each power plant system. There should be minimum of 05 nos. of Inviters should be used at each site.

b. PCU/inverter shall be capable of complete automatic operation including wake-up, synchronization & shutdown.

c. The output of power factor of PCU inverter is suitable for all voltage ranges or sink of reactive power, inverter should have internal protection arrangement against any sustainable fault in feeder line and against the lightning on feeder.

d. Built-in meter and data logger to monitor plant performance through external computer shall be provided.

e. The power conditioning units / inverters should comply with applicable IEC/ equivalent BIS standard for efficiency measurements and environmental tests as per standard codes IEC 61683/IS 61683 and IEC: 60068-2 (1,2,14,30)/Equivalent BIS Std.

f. The junction boxes/enclosures should be IP 65(for outdoor)/ IP 54 (indoor) and as per IEC: 529 specifications.

g. Inverter should have minimum two nos. of inbuilt MPPT less than two nos. of MPPT will not be accepted.

h. The PCU/ inverters should be tested from the MNRE approved test centres/ NABL /BIS /IEC accredited testing- calibration laboratories. In case of imported power conditioning units, these should be approved by international test houses.

i. The PCU shall have protection against any sustained fault, lighting discharge in feeder line and earth leakage faults.

j. The incoming DC feeder of PCU shall have suitably rated isolators to allow safe start up and shut down of the system and it terminal should be shrouded. The DC feeder shall terminate in the fuse box through suitable fuse rating. The PCU fuse box shall have one spare terminal with fuse and holder for future use. The connection between the fuse box and inverter shall be through copper bus bars or copper cable via bimetallic lugs.

k. The output of power factor of PCU inverter should be suitable for all voltage ranges or sink of reactive power, inverter should have internal protection arrangement against any sustainable fault in feeder line and against the lightning on feeder.

l. The inverters shall have minimum protection to IP 65(Outdoor)/IP 21(indoor) and Protection Class II.

m. Nuts & bolts and the PCU enclosure shall have to be adequately protected taking into consideration the atmosphere and weather prevailing in the area.

n. The inverter output shall always follow the grid in terms of voltage and frequency. This shall be achieved by sensing the grid voltage and phase and feeding this information to the feedback loop of the inverter. Thus control variable then controls the output voltage and frequency of the inverter, so that inverter is always synchronized with the grid. The inverter shall be self- commutated with Pulse width modulation (PWM) technology.

o. Built-in meter and data logger to monitor plant performance through external computer shall be provided.

p. The PCU shall remain connected to the grid as per central electricity authority (CEA) technical (standards for connectivity to the grid) regulation 2007 with all latest amendments and its component shall be designed accordingly.

q. The PCU/ inverter should be tested from the MNRE approved test centres / NABL /BIS /IEC accredited testing- calibration laboratories. In case of imported power conditioning unit, these should be approved by international test houses.

6.2.8 Integration of PV Power with Grid: The output power from SPV would be fed to the inverters which converts DC produced by SPV array to AC and feeds it into the main electricity grid after synchronization. In case of grid failure, or low or high voltage, solar PV system shall be out of synchronization and shall be disconnected from the grid.

6.2.9 Remote Monitoring Facilities:

The Power Plants should have suitable inbuilt instrumentation for web based remote monitoring of its Status. Power Plants shall be capable of transmitting its monitorable parameters over GSM/CDMA/GPRS/TCP IP Network and conform to respective standard protocols. The Power Plants shall also have suitable Data Logging & Storage capacity for at least 7 days event logs. The systems should also be able to be monitored in the internet at any time. The successful bidder has to be provided Net / SIM based Data logging system. The net charges will have to be borne by the successful Bidder for a period of 5 years from the date of commissioning of the plant.

6.2.10 Metering:

a. Check meters shall be mandatory for solar project having capacity more than 20kW. A bidirectional electronic Net/Energy Meter (Three Phase with or without CT operated, Trivector meter for 11/33kV) should provided as per the norms of Electricity Departments or as approved by Joint Electricity Regulatory Commission (JERC) for the State of Goa. The said Bidirectional Meters shall be approved by Electricity Department and are required to be tested in the MRT Division of Electricity Department. The expenditure on testing and calibrating of Energy Meter shall be borne by successful Bidder.

b. Uni-directional Energy Meter (Solar Meter) i.e. Three phase (with or without CT Operated) as per the norms of Electricity Departments or as approved by Joint Electricity Regulatory Commission (JERC) for the State of Goa. The said meter should be compatible with AMR facility and shall be approved by Electricity Department and are required to be tested in the MRT Division of Electricity Department. The expenditure on testing and calibrating of Energy Meter shall be borne by successful Bidder.
c. The solar meter and Net Meter should be fixed in separate Meter boxes in the same proximity.
d. Application Fees required for the installation of solar power plant should be paid to the Electricity Department by the successful bidder.

6.2.11 **Protections**: The system should be provided with all necessary protections like earthing, Lightning and grid islanding as follows:

A) **Lightning Protection:**

i. The SPV power plants shall be provided with lightning & over voltage protection, if required. The main aim in this protection shall be to reduce the overvoltage to a tolerable value before it reaches the PV or other sub system components. The source of over voltage can be lightning, atmosphere disturbances etc. Lightning arrestor shall not be installed on the mounting structure.
ii. The entire space occupying the SPV array shall be suitably protected against Lightning by deploying the required number of Lightning Arrestors (LAs). Lightning protection should be provided as per NFC17-102:2011/IEC 62305 standard.
iii. The protection against induced high voltages shall be provided using Metal Oxide Varistors (MOVs)/Franklin Rod type LA/Early streamer type LA.
iv. The current carrying cable from lightning arrestor to the earth pit should have sufficient current carrying capacity according to IEC 62305. According to standard, the minimum requirement for a lightning protection system designed for class of LPS III is a 10 mm2 copper/ 16 mm2 Aluminium or GI strip bearing size 25*3 mm thick). Separate pipe for running earth wires of Lightning Arrester shall be used.
v. An Early Steamer Emission (ESE) type Lightning Arrestor should be installed at all the site with a suitable capacity & height depending upon the capacity and area of the installed of the solar PV panels.

B) **Surge Protection:**

i. Internal surge protection, wherever required, shall be provided.
ii. At the DC Input side of the controller, it should have protection from an External Surge Protection.
iii. For SPDs IEC 63227 and its updated version or amendment should be followed.

C) **Earthing Protection:**

i. The earthing shall be done in accordance with latest Standards.

ii. Each array structure of the PV yard, Low Tension (LT) power system, earthing grid for switchyard, all electrical equipment, inverter, all junction boxes, etc. shall be grounded properly as per IS 3043- 2018.

iii. All metal casing/ shielding of the plant shall be thoroughly grounded in accordance with CEA Safety Regulation 2021 or amended with time to time. In addition, the lightning arrester/masts should also be earthed inside the array field and the position & height of the lightning arrester/mast should be such that it would cover the entire

volume of the SPV Panels to conduct through cable/ GI strip with proper insulation.

iv. Earth resistance should be as low as possible and shall never be higher than 5 ohms. Earth Resistance shall be tested in presence of the representative of / GEDA as and when required after earthing by calibrated earth tester. PCU, ACDB and DCDB should also be earthed properly.

v. For all grid connected rooftop solar PV systems, separate three earth pits shall be provided for individual three earthing viz.: DC side earthing, AC side earthing and lightning arrestor earthing with proper insulator.

vi. In the event of a power failure on the electric grid, it is required that any independent power-producing inverters attached to the grid turn off in a short period of time. This prevents the DC-to-AC inverters from continuing to feed power into small sections of the grid, known as “islands.” Powered islands present a risk to workers who may expect the area to be unpowered, and they may also damage grid-tied equipment. The Rooftop PV system shall be equipped with islanding protection. In addition to disconnection from the grid (due to islanding protection) disconnection due to under and over voltage conditions shall also be provided.

vii. A manual disconnect pole isolation switch beside automatic disconnection to grid would have to be provided at utility end to isolate the grid connection by the utility personnel to carry out any maintenance. This switch should be able to lock by the utility personnel.

viii. The bidder has to install the safety equipment as desired by Electricity Department.

6.2.12 **Cables**: Copper cables of appropriate size to be used in the system shall have the following characteristics:

a. Shall meet IEC 60227/IS 694, IEC 60502/IS1554 standards

b. Temp. Range: -10°C to +80°C.

c. Voltage rating 660/1000V

d. Excellent resistance to heat, cold, water, oil, abrasion, UV radiation

e. Flexible

f. Sizes of cables between array interconnections, array to junction boxes, junction boxes to Inverter etc. shall be so selected to keep the voltage drop (power loss) of the entire solar system to the minimum. The cables (as per IS) should be insulated with a special grade UPVC compound formulated for outdoor use.

g. Cable Routing/ Marking: All cable (AC/DC) /wires are to be routed through a suitable size of UPVC conduit (for outdoor use) and suitably tagged and marked with proper manner by good quality ferule or by other means so that the cable easily identified. The Cable should be so selected that it should be compatible up to the life of the solar PV panels i.e. 25years.

h. The ratings given are approximate. Bidder to indicate size and length as per system design requirement. All the cables required for the plant provided by the bidder. Any change in cabling sizes if desired by the bidder/approved after citing appropriate reasons. All cable schedules/layout drawings approved prior to installation.

i. Multi Strand, annealed high conductivity copper conductor, PVC type ‘A’ pressure extruded insulation or XLPE insulation. Overall PVC/XLPE insulation for UV protection Armoured

cable for underground laying. All cables shall conform to latest edition of IEC/ equivalent BIS Standards as specified below: BoS item / component Standard Description, Standard Number, Cables General Test and Measuring Methods, PVC/XLPE insulated cables for working Voltage up to and including 1100 V,UV resistant for outdoor installation IS /IEC 69947.

j. The electric cables for DC systems for rated voltage of 1500 V shall conform to BIS 17293:2020.

k. The size of each type of AC cable selected shall be based on minimum voltage drop however; the maximum drop shall be limited to 2%.

l. Cable for connecting ACDB to Inverter should copper 4core soft cable and for connecting ACDB to main AC LT panel should be 3.5 core armoured cable.

m. All cable/wires are to be routed in a UPVC pipe suitably tagged and marked with proper manner by good quality ferrule or by other means so that the cable is easily identified.

6.2.13 Connectivity: The maximum capacity for interconnection with the grid at a specific voltage level shall be as specified in the Distribution Code/Supply Code of the State and amended from time to time.

6.2.14 Tools & Tackles and Spares:

a. After completion of installation & commissioning of the power plant, necessary tools & tackles are to be provided free of cost by the bidder for maintenance purpose. List of tools and tackles to be supplied by the bidder for approval of specifications and make from GEDA.

b. A list of requisite spares in case of PCU/inverter comprising of a set of control logic cards, IGBT driver cards etc. Junction Boxes. Fuses, MOVs / arrestors, MCCBs etc. along with spare set of PV modules be indicated, which shall be supplied along with the equipment. A minimum set of spares shall be maintained in the plant itself for the entire period of warranty and Operation & Maintenance, which upon its use shall be replenished.

6.2.15 Danger Boards, Signage's & Caution Signs: Danger boards should be provided as and where necessary as per IE Act. /IE rules as amended up to date. Signage's shall be provided one each at control room, solar array area, etc.. Caution signs should be provided at Solar PV panels, Inverters, DC DB, AC DB, Solar Meter & Net Meter. Size of the caution label should be 200mm Width X 40mm Height with Red Letters on Yellow background.

6.2.16 Drawings and Manuals:

a. Two sets of Engineering, electrical drawings and Installation and O&M manuals are to be supplied. Bidders shall provide complete technical data sheets for each equipment giving details of the specifications along with make/makes in their bid along with basic design of the power plant and power evacuation, synchronization along with protection equipment.

b. Approved ISI and reputed makes for equipment be used.

c. For complete electro-mechanical works, bidders shall supply complete design, details and drawings for approval to GEDA before progressing with the installation work.

6.2.17 Planning & Designing:

a. The Bidder should carry out Shadow Analysis at the site and accordingly design strings & arrays layout considering optimal usage of space, material and labour. The bidder should submit the array layout drawings along with Shadow Analysis Report to GEDA for approval.

b. GEDA reserves the right to modify the landscaping design, Layout and specification of sub-systems and components at any stage as per local site conditions/requirements.

c. The Bidder shall submit preliminary drawing for approval & based on any modification or recommendation, if any. The bidder shall submit three sets and soft copy in CD of final drawing for formal approval to proceed with construction work.

6.2.18 Drawings to be furnished by Bidder after Award of Contract:

The Contractor shall furnish the following drawings Award/Intent and obtain approval

a. General arrangement and dimensioned layout

b. Schematic drawing showing the requirement of SV panel, Power conditioning Unit(s)/ inverter, Junction Boxes, AC and DC Distribution Boards, meters etc.

c. Structural drawing along with foundation details for the structure.

d. Itemized bill of material for complete SPV plant covering all the components and associated accessories.

e. Layout of solar Power Array

f. Shadow analysis of the roof

6.2.19 **Solar PV system on the rooftop for meeting the annual energy requirement:** Capacity of the Solar PV system on the rooftop of a building shall be based on contract demand/ connected load of the end user and shall be within the limits as per prevailing guidelines of JERC/ Goa Electricity Department.

6.2.20 **Safety Measures**: The bidder shall take entire responsibility for electrical safety of the installation(s) including connectivity with the grid and follow all the safety rules & regulations applicable as per Electricity Act, 2003 and CEA guidelines etc.

6.2.21 **Display Board:** The bidder has to display a board at the project site mentioning the following:

a. Plant Name, Capacity, Location, Date of commissioning, estimated Power generation.

b. The size and type of board and display shall be approved by GEDA before site inspection.

6.2.22 **Quality Certification, Standards and Testing for Grid-connected Rooftop Solar PV Systems/Power Plants**: Quality certification and standards for grid-connected rooftop solar PV systems are essential for the successful mass-scale implementation of this technology. It is also imperative to put in place an efficient and rigorous monitoring mechanism, adherence to these standards. Hence, all components of grid connected rooftop solar PV system/ plant must conform to the relevant standards and certifications given below:-

IEC Standards	
Solar Modules/Panels	
IEC 61215/ IS 14286	Design Qualification and Type Approval for Crystalline Silicon Terrestrial Photovoltaic (PV) Modules
IEC 61701	Salt Mist Corrosion Testing of Photovoltaic (PV) Modules
IEC 61853- Part 1/ IS 16170: Part 1	Photovoltaic (PV) module performance testing and energy rating –: Irradiance and temperature performance measurements, and power rating
IEC 62716	Photovoltaic (PV) Modules – Ammonia (NH3) Corrosion Testing (As per the site condition like dairies, toilets)
IEC 61730-1,2	Photovoltaic (PV) Module Safety Qualification – Part 1: Requirements for Construction, Part 2: Requirements for Testing
IEC 62804	Photovoltaic (PV) modules - Test methods for the detection of potential-induced degradation. IEC TS 62804-1: Part 1: Crystalline silicon (mandatory for applications where the system voltage is > 600 VDC and advisory for installations where the system voltage is < 600 VDC)
IEC 62759-1	Photovoltaic (PV) modules – Transportation testing, Part 1: Transportation and shipping of module package units
Solar PV Inverters	
IEC 62109-1, IEC 62109-2	Safety of power converters for use in photovoltaic power systems Part 1: General requirements, and Safety of power converters for use in photovoltaic power systems Part 2: Particular requirements for inverters. Safety compliance (Protection degree IP 65 for outdoor mounting, IP 54 for indoor mounting)
IEC/IS 61683 (as applicable)	Photovoltaic Systems – Power conditioners: Procedure for Measuring Efficiency (10%, 25%, 50%, 75% & 90-100% Loading Conditions)
BS EN 50530 (as applicable)	Overall efficiency of grid-connected photovoltaic inverters: This European Standard provides a procedure for the measurement of the accuracy of the maximum power point tracking (MPPT) of inverters, which are used in grid-connected photovoltaic systems. In that case the inverter energizes a low voltage grid of stable AC voltage and constant frequency. Both the static and dynamic MPPT efficiency is considered.
IEC 62116/ UL 1741/ IEEE 1547 (as applicable)	Utility-interconnected Photovoltaic Inverters - Test Procedure of Islanding Prevention Measures
IEC 60255-27	Measuring relays and protection equipment – Part 27: Product safety requirements

IEC 60068-2 (1, 2, 14, 27, 30 & 64)	Environmental Testing of PV System – Power Conditioners and Inverters a) IEC 60068-2-1: Environmental testing - Part 2-1: Tests - Test A: Cold b) IEC 60068-2-2: Environmental testing - Part 2-2: Tests - Test B: Dry heat c) IEC 60068-2-14: Environmental testing - Part 2-14: Tests - Test N: Change of temperature d) IEC 60068-2-27: Environmental testing - Part 2-27: Tests - Test Ea and guidance: Shock e) IEC 60068-2-30: Environmental testing - Part 2-30: Tests - Test Db: Damp heat, cyclic (12 h + 12 h cycle) f) IEC 60068-2-64: Environmental testing - Part 2-64: Tests - Test Fh: Vibration, broadband random and guidance
IEC 61000 – 2,3,5 (as applicable)	Electromagnetic Interference (EMI) and Electromagnetic Compatibility (EMC) testing of PV Inverters
Fuses	
IS/IEC 60947 (Part 1, 2 & 3), EN 50521	General safety requirements for connectors, switches, circuit breakers (AC/DC): a) Low-voltage Switchgear and Control-gear, Part 1: General rules b) Low-Voltage Switchgear and Control-gear, Part 2: Circuit Breakers c) Low-voltage switchgear and Control-gear, Part 3: Switches, disconnectors, switch-disconnectors and fuse-combination units d) EN 50521: Connectors for photovoltaic systems – Safety requirements and tests
IEC 60269-6	Low-voltage fuses - Part 6: Supplementary requirements for fuse-links for the protection of solar photovoltaic energy systems
Surge Arrestors	
IEC 62305-4	Lightening Protection Standard
IEC 60364-5-53/ IS 15086-5 (SPD)	Electrical installations of buildings - Part 5-53: Selection and erection of electrical equipment - Isolation, switching and control
IEC 61643-11:2011	Low-voltage surge protective devices - Part 11: Surge protective devices connected to low-voltage power systems - Requirements and test methods
Cables	
IEC 60227/IS 694, IEC 60502/IS 1554 (Part 1 & 2)/ IEC69947	General test and measuring method for PVC (Polyvinyl chloride) insulated cables (for working voltages up to and including 1100 V, and UV resistant for outdoor installation)
BS EN 50618	Electric cables for photovoltaic systems (BT(DE/NOT)258), mainly for DC Cables
Earthing /Lightning	
IEC 62561 Series (Chemical earthing)	IEC 62561-1 Lightning protection system components (LPSC) - Part 1: Requirements for connection components IEC 62561-2 Lightning protection system components (LPSC) - Part 2: Requirements for conductors and earth electrodes IEC 62561-7 Lightning protection system components (LPSC) - Part 7: Requirements for earthing enhancing compounds
Junction Boxes	

IEC 60529	Junction boxes and solar panel terminal boxes shall be of the thermo-plastic type with IP 65 protection for outdoor use, and IP 54 protection for indoor use
Energy Meter	
IS 16444 or as specified by the DISCOMs	A.C. Static direct connected watt-hour Smart Meter Class 1 and 2 — Specification (with Import & Export/Net energy measurements)
Solar PV Roof Mounting Structure	
IS 2062/IS 4759	Material for the structure mounting

Note- Equivalent standards may be used for different system components of the plants. In case of clarification following person/agencies may be contacted.

- Ministry of New and Renewable Energy (Govt. of India)
- National Institute of Solar Energy (NISE)
- TUV Rheinland
- UL

7 COMMERCIAL TERMS, CONDITIONS & OTHER PROVISIONS

7.1 The Financial Bid should be made after taking into consideration all costs involved in the project i.e. obtaining No Objection Certificate (NOC) from concerned Electricity Department's office for grid connectivity, complete design, supply, installation, testing, commissioning, operation & maintenance up to 5 years after commissioning including all taxes and duties of Central & State Governments, insurance, etc.

7.2 Price quoted by the bidder shall remain firm & fixed and shall be binding on the Successful Bidder till completion of Comprehensive Maintenance period irrespective of actual cost of execution of the project. No escalation will be granted on any reason whatsoever. The bidder shall not be entitled to claim any additional charges, even though it may be necessary to extend the completion period for any reasons whatsoever.

7.3 Validity of Offer: The offer must be kept valid for a period of 180 days from the last date of opening of tender. No escalation clause would be accepted. No escalation clause except the admissible tax component under the period of consideration would be accepted. The validity can be further extended with mutual consent.

7.4 Bids with non-conformity to above will be considered as non-responsive.

7.5 Cost of Bidding: The bidder shall bear all the costs associated with the preparation and submission of his offer, and the company will in no case be responsible or liable for those costs, under any conditions. The Bidder shall not be entitled to claim any costs, charges and expenses of and incidental to or incurred by him through or in connection with submission of bid even though GEDA may elect to modify / withdraw the invitation of Bid.

7.6 Tender Cost: The bidder shall submit Tender Cost of Rs. 2,000. Through online payment.

7.7 Security Deposit:

7.7.1 The successful bidder shall be required to deposit Security Deposit (SD) equivalent to 3% in the form of Bank Guarantee (BG) with validity of 420 days. The EMD of such successful bidders shall be released on submission of SD.

7.7.2 Failure to comply with the terms of security deposit shall result into cancellation of work order without any further reference to the bidder and the EMD shall be forfeited.

7.7.3 If the Successful Bidder is not able to commission the sanctioned projects to the satisfaction of GEDA within sanctioned period, the BG submitted by the Successful Bidder shall be forfeited.

7.7.4 Further, the said bidder may be black-listed for a period of three year or more from participating in any of the bids invited by GEDA. Also, GEDA would be free to intimate such black-listing to various state/central utilities/ Ministry of Power/ Ministry of New & Renewable Energy/ State Governments/ other agencies not to consider the said agency for any assignment including of the same on websites.

7.7.5 In case of premature termination of the contract, the SD will be forfeited and the GEDA will be at liberty to recover the loss suffered by it & if additional cost is to be paid, the same shall be recovered from the bidder.

7.7.6 Security Deposit will be released along with final payment.

7.7.7 Delivery: The materials must be delivered timely to the project site so as to complete the work within sanctioned period.

7.7.8 Quantity: The quantity/ capacity mentioned in the tender might either increase or decrease according to the requirement.

7.7.9 Liquidated Damages: For the delay in obtaining approval from concerned Goa Electricity Department's office for grid connectivity, complete design, supply, installation, testing and commissioning of grid connected rooftop solar PV power plants, the liquidity damage @1% of the contract value per week or part thereof subject to the maximum of 10% of the contract value shall be deducted from the bill of the contractor.

7.7.10 Performance Acceptance Tests (PAT): After installation and charging, System shall be accepted after successful completion of Performance Acceptance Tests (PAT) as under:

Performance Ratio (PR)

PR= (Measured output in kW ×1000 W/m^2) / (Installed Plant Capacity(kW) x Measured Irradiation intensity in W/m2)

Note: Plant Performance Ratio should be at least 75%.

7.7.11 Force Majeure: Force majeure shall mean any cause, existing or future, which is beyond the reasonable control of Bidder or GEDA including, but not limited to, acts of God, storm, fire, floods, explosion, epidemics, quarantine, earthquake, strike, riot, lock out, embargo, interference by civil or military authorities, acts, regulations or orders of any governmental authority in their sovereign capacity, acts of war (declared or undeclared) including any acts of terrorism, and all other such acts of similar or analogous nature (where all such acts to be collectively referred to as "Force Majeure"). GEDA and Bidder shall not be liable for the failure to perform any obligation in terms of this Proposal if and to such extent such failure is caused by a Force Majeure, provided that none of such acts of Force Majeure will relieve the Customer from meeting its payment obligations.

7.8 Earnest Money Deposit (EMD):

7.8.1 The bidder shall have to furnish earnest money deposit.

7.8.2 Mode of Payment towards EMD: To be paid online through e-payment mode via NEFT/RTGS/OTC/debit card/credit card facility/net banking with pre-printed challans available on e-tendering website and directly credit the amount to ITG account as generated by challans for NEFT/RTGS/OTC.

7.8.3 EMD in any other form will not be accepted. The tenders without earnest money deposit will be summarily rejected.

7.8.4 EMD would be refunded to the unsuccessful Bidder without any interest and will be adjusted against Security Deposit (SD) in case of successful bidder after finalization of tender.

7.8.5 The initial validity of EMD shall be for a period of 180 days from the last date of bid submission.

The validity of EMD shall have to be suitably extended, if necessary, on request by GEDA, without which the tender/work order shall be rejected.

7.8.6 Request for adjustment of Earnest Money Deposit against any previous dues with GEDA will not be considered.

7.8.7 EMD will be refunded to the unsuccessful bidders after finalization of the tender without any interest.

7.8.8 EMD of successful bidder will be returned after the submission of security deposit equivalent of 5% of the project cost in the form of Bank Guarantee (BG) against the Letter of Award within 15 days.

7.8.9 The units functioning in Goa and registered /acknowledge under the certificates of MSMEs i.e. EM-II/Udyog Aadhar/Udyam Registration are eligible for the exemption of EMD under the Preferential Purchase Incentives for Micro and Small Enterprises Scheme 2008 of Goa Government and its amendments from time to time. Under the said scheme bidder is required to deposit EMD maximum of Rs.500/- & Tender document shall be supplied at the rate maximum upto Rs.200/-.

7.8.10 EMD shall be forfeited without prejudice to the Bidder being liable for any further consequential loss or damage incurred to GEDA under following circumstances:

a) Hundred percent (100%) of EMD amount, if a Bidder withdraws/revokes or cancels or unilaterally varies his bid in any manner during the period of bid validity specified in the tender document.

b) Hundred percent (100%) of EMD amount, if the Successful Bidder fails to unconditionally accept the Allocation Letter within 15 days from the date of its issue along with submission of security deposit. If The bidder fails / refuses to execute the order as herein, the bidder shall be deemed to have abandoned the contract & such an act shall amount to and be constructed as the bidder's calculated and will breach of contract, the cost and consequent of which shall be to the solar account of the bidder and in such an event the GEDA shall have full right to claim damages thereof in addition to the forfeiture of EMD.

c) Hundred percent (100%) of EMD amount, if the Successful Bidder fails to furnish security deposit against empanelment period as specified in the tender document.

7.9 Performance Bank Guarantee (PBG):

7.9.1 Performance bank Guarantee shall be submitted within 15 days from the date of commissioning of the plant and integration with grid. Successful bidder must deposit Performance Bank Guarantee (PBG) fees @ 10% of the project cost of sanction project capacity to GEDA as per Annexure-IX with validity till completion of 5 years' Maintenance period plus 90 days of claim period.

7.9.2 The PBG shall be released after 5 years from the date of commissioning on compliance of entire obligations in the contract.

7.9.3 The PBG shall be forfeited without prejudice to the Bidder being liable for any further

consequential loss or damage incurred to GEDA, If the installed PV system does not perform during O&M period as per specifications given in this tender, respective PBG amount submitted towards such capacity commissioned by the Successful Bidder shall be forfeited.

7.9.4 Further, the said bidder may be black-listed for a period of one year or more from participating in any of the bids invited by GEDA. Also, GEDA would be free to intimate such black-listing to various state/central utilities/ Ministry of Power/ Ministry of New & Renewable Energy/ State Governments/ other agencies not to consider the said agency for any assignment including of the same on websites.

7.10 Specifications: The detailed technical specifications of the SPV system should be as specified under JNNSM issued by MNRE Govt. of India vide letter no- 30/11/2012-13/NSM dated: 26.06.2014 for Grid connected Rooftop and subsequent amendments issued. The material must conform to the specifications and standards mentioned in Technical Specifications specified in Section-6.

7.11 Performance Acceptance Tests (PAT): After installation and charging, System shall be accepted after successful completion of Performance Acceptance Tests (PAT) as under:

Performance Ratio (PR)

$$PR = \frac{\text{Measured output in kW}}{\text{Installed Plant Capacity(kW)}} \times \frac{1000\ W/m^2}{\text{Measured Irradiation intensity in W/m2}}$$

Note: Plant Performance Ratio should be at least 75%.

7.12 Split of Works: In view of targeted capacity and limited time available for completion of the task, GEDA reserves the right to increase / decrease / split of the work to agencies based on buildings / capacity at the sole discretion of the GEDA. Suitable amendment / communication shall be issued in the event of variations in quantities.

7.13 Force Majeure: Force majeure shall mean any cause, existing or future, which is beyond the reasonable control of Bidder or GEDA including, but not limited to, acts of God, storm, fire, floods, explosion, epidemics, quarantine, earthquake, strike, riot, lock out, embargo, interference by civil or military authorities, acts, regulations or orders of any governmental authority in their sovereign capacity, acts of war (declared or undeclared) including any acts of terrorism, and all other such acts of similar or analogous nature (where all such acts to be collectively referred to as “Force Majeure”). GEDA and Bidder shall not be liable for the failure to perform any obligation in terms of this Proposal if and to such extent such failure is caused by a Force Majeure, provided that none of such acts of Force Majeure will relieve the Customer from meeting its payment obligations.

7.14 Terms of Payment

7.14.1 30% of the project cost will be released after receipt of material at site in good condition at the site to the satisfaction of Member Secretary, GEDA.

7.14.2 60% of the project cost will be released after the successful installation, testing and commissioning of the solar plant and the installation of Bidirectional Meter by Electricity Department.

7.14.3 10% of the project cost shall be made after a trial run of atleast one month and submission of the Performance Bank Guarantee of 10% of the Project cost valid for 05 years from the date of commissioning of system. Security deposit will be returned along with final payment.

7.14.4 Payment for the work will be made, subject to the availability of funds without any additional liability of interest.

7.15 Dispute:

7.15.1 Disputes under the agreement shall be settled by mutual discussion.

7.15.2 However, in the event amicable resolution or settlement is not reached between the parties, the differences of disputes shall be referred to and settled by the Sole Arbitrator to be appointed by Member Secretary, GEDA.

7.15.3 The arbitration proceedings shall be in accordance with the prevailing Arbitration and Conciliation Act, 1996 and Laws of India as amended or enacted from time to time.

7.15.4 The venue of the arbitration shall be Panaji, Goa.

7.15.5 The fee & other charges of Arbitrator shall be shared equally between the parties.

7.15.6 The Arbitrator will give the speaking & reasoned award. The party will not be entitled to any Pendent late interest during arbitration proceedings.

7.16 Sanctioning of Projects:

7.16.1 The bidder shall submit project sanction documents to GEDA as below:

I. DPR of identified building/project
II. Approval from concerned Electricity Department's office for grid connectivity

7.16.2 Further, Successful bidders to whom Allocation Letter has been issued will be allowed to collate projects for approval and issuance of Sanction Letter by GEDA. In such case, single Sanction Letter will be issued for the total aggregate capacity submitted by the bidder for approval.

7.16.3 GEDA will issue Sanction Letter to the bidder after scrutiny and acceptance of project sanction documents submitted by the bidder. The successful bidder` shall complete design, engineering, supply, storage, civil work, installation, testing & commissioning of the grid connected rooftop solar PV projects as per schedule mentioned in Section 3, Para 3.5.2.

7.17 Commissioning Certificate:

7.17.1 On completion of installation of SPV power project, the successful bidder shall apply for commissioning certificate with GEDA. A Joint Commissioning Certificate shall be signed normally within 2 weeks from the date of receiving application after due verification at site.

8 GENERAL CONDITIONS OF BID

8.1 General:

8.1.1 The successful bidder shall ensure that deputed personnel are trained and experienced for jobs as defined in scope of work for ensuring the high quality and correctness of jobs and to be carried out in a highly professional, safe, and sound managerial manner.

8.1.2 GEDA reserves the right to accept or reject any or all Bid requests without assigning any reason.

8.1.3 GEDA reserves the right to waive off any shortfalls; accept the whole, accept part of or reject any or all responses to this tender.

8.1.4 GEDA reserves the right to modify, expand, restrict, scrap, re-float the tender without assigning any reason for the same.

8.1.5 The responder shall bear all costs associated with the preparation and submission of its Bid and GEDA will in no case be responsible or liable for these costs, regardless of the conduct or the outcome of the tender process.

8.1.6 GEDA reserves the right to withdraw the work & get it completed at the risk & cost of the agency, if performance of the agency is unsatisfactory, to whom work has been awarded. Further, the said agency may be black-listed for a period of one year or more for participating in any of the bids invited by GEDA. Also, GEDA would be free to intimate such black-listing to various state/central utilities/ Ministry of Power/ State Governments/ Other agencies not to consider the said agency for any assignment including of the same on websites.

8.1.7 GEDA reserves the right to conduct reverse auction.

8.1.8 Bidder has to specify Make, Model, Specification, unit and quantity of all Bill of Material (BOM) items and components in Technical Bid format as per MNRE standards.

8.1.9 Bidder has to submit test certificates as specified under JNNSM issued by MNRE, Govt. of India vide letter no. 30/11/2012-13/NSM dated: 26.06.2014 for Grid Connected Rooftop & Small Solar Power Plants and subsequent addendums.

8.1.10 Bidder has to give declaration to the effect that the complete plant including all the balance of system (BOS) are as per standard equivalent to those specified under JNNSM by MNRE.

8.1.11 In case of supply of any defective material or substandard material, the materials will be rejected & it will be the responsibility of the vendor for taking back & replacing the rejected materials at their own cost.

8.1.12 The supplied materials should be strictly as per specifications mentioned in this tender, otherwise the material would be liable for rejection.

8.1.13 Validity of Bid shall be 180 days from the opening of the tender.

8.1.14 The Bid with validity of less than 180 days from the last date of bid submission shall not be considered. The validity can be further extended with mutual consent.

8.1.15 No price escalation is applicable on account of any statutory payments increase or fresh imposition of taxes or duties leviable in respect of the major components in the said acceptance

of the tender.

8.1.16 Bidder's quoted rates should be firm and fixed. No price variation and escalation will be allowed.

8.1.17 Bids must be submitted in English language only.

8.1.18 Incomplete, telegraphic or conditional tenders are not accepted.

8.1.19 Canvassing in any manner is strictly prohibited. The same will lead to rejection of the submitted bid.

8.1.20 The technical bid shall be opened in GEDA office, Panaji in the presence of such Bidders /their representatives as per the date & time mentioned in the NIT, who desire to be present at the time of opening.

8.1.21 Any or all Bids may be rejected or accepted partially or fully without assigning any reason thereof by Member Secretary, GEDA.

8.1.22 Bidders are not allowed to advertise/ publicize SPV systems installed through this tender without prior approval from GEDA.

8.1.23 If the solar rooftop potential of any rooftop building assessed by the GEDA is different from mentioned in the tender document, the bidder must inform GEDA in writing before the pre-bid meeting.

8.1.24 Bidder shall submit following documents:

a) Copy of PAN and applicable GST Certificate should be submitted.

b) Bidder must submit the list of projects undertaken in last one year as per the format given in Annexure-VIII and upload along with work orders.

c) Bidder should not be black-listed by Central/State Government organization, PSU, etc.

8.2 Clarifications and Pre-Bid Meeting:

8.2.1 GEDA will not enter into any correspondence with the Bidders, except to furnish clarifications on Tender Documents, if necessary. The Bidders may seek clarifications or suggest amendments to Tender documents online, also soft copy by e-mail to reach GEDA at the address, date and time mentioned in Bid information sheet.

8.2.2 The Bidder(s) or their authorized representative(s) is /are invited to attend pre-bid meeting(s) which will take place on date(s) as specified in Bid information sheet, or any such other date as notified by GEDA.

8.2.3 The purpose of the pre-bid meeting will be to clarify any issues regarding the Bid documents including in particular, issues raised in writing and submitted by the Bidders.

8.2.4 GEDA is not under any obligation to entertain/ respond to suggestions made or to incorporate modifications sought for.

8.3 Amendments to Bid Documents by GEDA:

8.3.1 At any time prior to the deadline for submission of Bids, GEDA may, for any reason, whether at its own initiative or in response to a clarification requested by a prospective Bidder, modify the Bid document by issuing clarification(s) and/or amendment(s).

8.3.2 The clarification(s) / amendment(s) (if any) shall be notified on e-procure website -

https://eprocure.goa.gov.in at least Two (2) days before the proposed date of submission of the Bid. If any amendment is required to be notified within Two (2) days of the proposed date of submission of the Bid, the Bid Deadline may be extended for a suitable period of time.

8.3.3 GEDA will not bear any responsibility or liability arising out of non-receipt of the information regarding Amendments in time or otherwise. Bidders must check the website for any such amendment before submitting their Bid.

8.3.4 In case any amendment is notified after submission of the Bid (prior to the opening of Bid due date/time) shall be extended and it will be for the Bidders to submit fresh Bids/supplementary bids as the date notified by the GEDA for the purpose.

8.3.5 All the notices related to this Bid which are required to be publicized shall be uploaded on eprocure website - https://eprocure.goa.gov.in

8.4 Right to withdraw the Tender Document and to reject any Bid:

8.4.1 This Tender Document may be withdrawn or cancelled by GEDA at any time without assigning any reasons thereof. GEDA further reserves the right, at its complete discretion, to reject any or all of the Bids without assigning any reasons whatsoever and without incurring any liability on any account.

8.4.2 GEDA reserves the right to interpret the Bid submitted by the Bidder in accordance with the provisions of the Tender Document and make its own judgment regarding the interpretation of the same. In this regard, the GEDA shall have no liability towards any Bidder and no Bidder shall have any recourse to GEDA with respect to the selection process. GEDA shall evaluate the Bids using the evaluation process specified in Tender Document, at its sole discretion. GEDA decision in this regard shall be final and binding on the Bidders.

8.5 GEDA reserves its right to vary, modify, revise, amend or change any of the terms and conditions of the Bid before submission. The decision regarding acceptance of bid by GEDA will be full and final.

8.6 The Makes of various Item shall be as under:

Sr. No.	Disruption	Make
1.	SPV Modules	To be quoted by the firm. Option of minimum one brand to be quoted by bidder. The Photovoltaic modules must be made in India and tested & approved by one of the IEC authorized test centers, Test Certificates can be from any of the NABL / BIS accredited testing / calibration lab. The SPV modules to be supplied should be approved from MNRE.
2.	Power Controlling Unit (Invertors)	DELTA/Fronius/Thea/Havels/Growatt. Minimum IP 65 standard for outdoor & IP 21 for indoor applications. Option of minimum one brand to be quoted by bidder.
3.	Switchgear for AC Distribution Panel	ABB/ SIEMENS / Schneider Electric/L&T/C&S/ HENSEL, etc. as per ISI standards or any other reputed brand as per ISI standards.

4.	Cables	Finolex / Havells / Polycab / RPG or any reputed brand and should be ISI/TUV Approved.
5.	Housing cabinets	The field array junction boxes will comply with IP65 standard. The electronics including inverters, CPU, charge controllers, MPPTs, AC & DC distribution boxes should comply IP21 for indoor and IP 65 for outdoor applications.
6.	Surge Protection Devices	CITEL/ PHOENIX/DEHN/ OBO/ SCHNEIDER ELECTRIC/ ABB/HAGER, etc. or any other reputed brand as per ISI standards.
7.	Energy Meter	L&T/Secure

Annexure-I

DECLARATION BYTHE BIDDER

(To be submitted on Company's letter head duly signed)

(Regarding TenderNo_____dated_____)

I/We

……..

(Herein after referred to as Bidder) being desirous of tendering for the work, under this tender and having fully understood the nature of the work and having carefully noted all the terms and conditions, specifications, etc. as mentioned in the tender document do hereby declare that-

1. The Bidder is fully aware of all the requirements of the tender document and agrees with all provisions of the tender document and accepts all risks, responsibilities and obligations directly or indirectly connected with the performance of the tender.
2. The Bidder is fully aware of all the relevant information for proper execution of the proposed work, with respect to the proposed place of works/ site, its local environment, approach road and connectivity, etc. and is well acquainted with actual and other prevailing working conditions, availability of required materials and labor, etc. at site. **(The Bidders are requested to visit all sites and take in to consideration the scope and limitations before quoting.)**
3. The Bidder is capable for executing and completing the work as required in the tender and is financially solvent and sound to execute the tendered work. The Bidder is sufficiently experienced and competent to perform the contract to the satisfaction of Goa Energy Development Agency. The Bidder gives the assurance to execute the tendered work as per specifications, terms and conditions of the tender on award of work.
4. The Bidder has not been influenced by any statement or promises by Goa Energy Development Agency or any of its employees but only by the tender document.
5. The Bidder is familiar with all general and special laws, acts, ordinances, rules and regulations of the Municipal, District, State and Central Government that may affect the work, its performance or personnel employed therein.
6. The Bidder has never been debarred from similar type of work by any Government undertaking/Department.(An undertaking on Stamp paper in this regard shall be submitted)
7. The Bidder accepts that the earnest money/security deposit may be absolutely forfeited by Goa Energy Development Agency if the selected bidder fails to sign the contract or to undertake/ complete the work and hand over within stipulated time.
8. This offer shall remain valid for acceptance for 180 days from the proposed date of opening of the Technical Bid.
9. All the information and the statements submitted with the tender are true and correct to the best of my knowledge and belief.

(Signature of Bidder)

Name:_____

Designation:_____

Date:

Place: Seal:

Annexure II

Covering Letter

(To be submitted on Company's letter head duly signed)

FROM:
(Full name and address of the Applicant bidder with contact phone no.)
M/s.....
.....
.....
.....

To:
The Member Secretary
Goa Energy Development Agency
5th Floor, Goa-IDC Building,
Patto, Panaji
Goa- 403001

Subject: -Offer in response to Tender Notice No.……date……

Sir,

1)We, the undersigned……..[insert name of the 'Bidder'] having read, examined and understood in detail the Tender Document for Implementation of Grid connected Roof Top Solar PV System hereby submit our Bid comprising of Price Bid and Techno Commercial Bid. We confirm that neither we nor any of our Parent Company / Affiliate / Ultimate Parent Company has submitted Bid other than this Bid directly or indirectly in response to the aforesaid Tender.

We hereby submit our offer in full compliance with terms & conditions of the attached tender. The tender is being submitted online separately for Technical Bid (Part-1)& Financial Bid (Part -2).

2) **Bid Capacity**
We have bid for the capacity of __ kWp, as per Tender document terms and conditions.

3) Earnest Money Deposit (EMD)
We have done the payment of EMD of Rs……(Insert Amount), via e-payment in terms of Clause ……of this Tender Document.

5) Acceptance
We hereby unconditionally and irrevocably agree and accept that the decision made by Goa Energy Development Agency in respect of any matter regarding or arising out of the Tender shall be binding on us. We hereby expressly waive any and all claims in respect of Bid process.

6) Contact Person
Details of the contact person are furnished as under:
Name : …… Designation : ……..... Company : ……. Address: ……. Phone Nos.:……Fax Nos.:……E-mail address : ……..

7) We hereby submit our offer in full compliance with terms & conditions of the attached tender.

The tender is being submitted online separately for Technical Bid (Part-1)& Financial Bid (Part -2).

It is confirmed that our Bid is consistent with all the requirements of submission as stated in the Tender Document and subsequent communications from Goa Energy Development Agency. The information submitted in our Bid is complete, strictly as per the requirements stipulated in the Tender Document and is correct to the best of our knowledge and understanding. We would be solely responsible for any errors or omissions in our Bid. We confirm that all the terms and conditions of our Bid are valid for acceptance for a period of 180 days from the Bid deadline. We confirm that we have not taken any deviation so as to be deemed non-responsive.

Name, Designation and Signature of Authorized Person in whose name Power of Attorney / Board Resolution / Declaration

(Signature of Applicant bidder)
With Seal

Annexure III

GENERAL PARTICULARS OF BIDDER

(To be submitted on Company's letter head duly signed)

Sl. No.	Particulars	Details
1	Name of Tenderer /Bidder	
2	Postal Address	
3	e-mail address for communication	
4	Telephone, Fax No.	
5	Name, designation & contact number of the Representative of the tenderer to / whom all references shall be made.	
6	Nature of the Bidder (Pvt Ltd/ Public Ltd. / Public Sector etc.) Attach copy of Certificate of Incorporation / Certificate of Commencement of Business (if applicable) /Memorandum of Association /Articles of Association	
7	Details of the Ownership structure (Details of persons owning 10% or more of the Total Paid up equity of the Bidding Company in the Format as below	
8	Whether company is MSME as on the bidding date?	
9	Amount and particulars of the earnest Money deposited.	
10	Annual Turnover for last two years revenue or Net-worth as on date.	Year : Turnover 2020-21: 2021-22: Net Worth(As on date):
11	Name and address of the Indian / foreign collaboration, if any.	
12	PAN, GST Registration No. –	
13	Has the tenderer /bidder ever been Debarred by any institution for undertaking any work?	
12	Any other information attached by the tenderer (Details and Annexure/page no. Where its enclosed)	

Bidders are requested to give their full particulars and legal & financial status.

(Signature of Bidder with Seal)

Note: In case of non-submission of Goa SGST Registration No. Selected bidder will be allowed one month time for getting SGST Registration No. from the date of issue of final work order.

Annexure-IV

LETTER FOR SUBMISSION OF BID

(To be submitted on Company's letter head duly signed)

To,
The Member Secretary
Goa Energy Development Agency
5th Floor, Goa-IDC Building
Patto,Panaji,
Goa – 403001

Sub.: Selection of Project Developer for Grid Connected Rooftop Solar PV Project

Dear Sir,

We wish to submit bid against GEDA's tender dated ..... for "Design, Supply, Installation, Testing and Commissioning of aggregated capacity of 1200kWp Grid Connected Solar Rooftop PV Power Plant including Operation and Maintenance for 5 years at North Goa & South Goa District Hospital, Goa.

Further, I hereby certify that:

1. I have read the provisions of all clauses and confirm that notwithstanding anything stated elsewhere to the contrary, the stipulation of all clauses of Bid are acceptable to me and I have not taken any deviation to any clause.

2. I further confirm that any deviation to any clause of Tender found anywhere in my Bid, shall stand unconditionally withdrawn, without any cost implication whatsoever to the GEDA.

3. Our bid shall remain valid for period of 180 days from the date of opening of financial bid

Date: Signature:
Place Full Name:
Designation:
Address:

Note: In absence of above declaration/certification, the Bid is liable to be rejected and shall not be taken into account for evaluation.

Annexure-V

BIDDER'S GENERAL DETAILS

(To be submitted on Company's letter head duly signed)

NIT No: dated:

Installation of aggregated capacity of 1200kWp Grid Connected Solar Rooftop PV Power Plant including Operation and Maintenance for 5 years at North Goa & South Goa District Hospital, Goa.

GENERAL DETAILS

Sl. No.	Particulars	Description
1.	Name of the Company	
2.	Year of Incorporation	
3.	Name of Authorized person	
4.	Office Address	
5.	Name, designation and contact of the Authorised person	
6.	Telephone no.	
7.	Mobile no.	
8.	Email	
9.	Type of Firm (please tick)	Private Ltd./ Public Ltd./ LLP/ Joint Venture Company
10.	Permanent Account Number (PAN)	
11.	Goods and Service Tax Reg. Certificate No	
12.	Details of EMD	

Signature……..……..……

Full Name……..…..

Designation……

Address……..

Annexure-VI

LETTER OF TRANSMITTAL

(To be submitted on Company's letter head duly signed)

To,
The Member Secretary
Goa Energy Development Agency
5th Floor, Goa-IDC Building
Patto,Panaji,
Goa – 403001

Dear Sir,

I/We, the undersigned, have examined the details given in your Tender No._____ dated: _____for installation of aggregated capacity of 1200kWp Grid Connected Solar Rooftop PV Power Plant including Operation and Maintenance for 5 years at North Goa & South Goa District Hospital, Goa.

We accept all the terms & conditions of the bid document without any deviation and submit the Bid.

Also, M/s _____ or its group companies is not executing or providing any type of consultancy services either directly or as a sub-contractor for the particular work for which Bid is submitted.

It is Confirmed that M/s. _____ has not submitted any other bid under this tender.

It is confirmed that M/s. _____ is not barred or blacklisted by any Govt./Pvt. Institutions in India.

Authorized Signature [In full and initials]:

Name and Title of Signatory:

Name of Firm:

Address:

Annexure-VII

FINANCIAL ELIGIBILITY CRITERIA AS PER SECTION-2

(To be submitted on CA letter head duly signed)

To,
The Member Secretary
Goa Energy Development Agency
5th Floor, Goa-IDC Building
Patto,Panaji,
Goa – 403001

Dear Sir,

The financial detail of the company is provided below:

Name of Bidding Company	Financial Year	Annual turnover (as per audited balance sheets)	Annual Turnover*	Net Worth as per Latest Audited Accounts

* Annual Turnover is for the last two financial years as per the audited balance sheets

(Signature & seal of Authorized Signatory)

Name:
Designation:
Date:
Place:

(Signature & seal of Chartered Accountant)
Name:
Date:
Place:
Membership No. :
UDIN :

NOTE to the bidder: In case of lower turnover as mentioned in Section 2, GEDA will consider Net-worth for assessment of Eligibility.

Annexure-VIII

Work Experience

(To be submitted on Company's letter head duly signed)

Name of the Organisation:					
List of works completed in Last 03 Year					
S. No.	Name & Address of the Client	Contact Number of the Client	Capacity of Project	Value of Work Order	Actual Date of Completion
1					
2					
3					
4					
5					

*The Bidder may require to submit all the attested copy of the work orders mentioned above as and when required.

Annexure-IX

PERFORMANCE BANK GUARANTEE (PBG) FORMAT

To,
The Member Secretary
Goa Energy Development Agency
5th Floor, Goa-IDC Building
Patto,Panaji,
Goa – 403001

(With due stamp duty if applicable)

OUR LETTER OF GUARANTEE NO.: _____

In consideration of Goa Energy Development Agency., having its office at _____ _____ (hereinafter referred to as "GEDA" which expression shall unless repugnant to the content or meaning thereof include all its successors, administrators and executors) and having issued Work Order No.

_____dated _____with/on M/s _____ (hereinafter referred to as "The Agency" which expression unless repugnant to the content or meaning thereof, shall include all the successors, administrators, and executors).

WHEREAS the Agency having unequivocally accepted to perform the services as per terms and conditions given in the Work Order/ Sanction Order No._____dated _____ and GEDA having agreed that the Agency shall furnish to GEDA a Performance Guarantee for the faithful performance during the entire contract, of the value of ₹_____.

We, _____ ("The Bank") which shall include OUR successors, administrators and executors herewith establish an irrevocable Letter of Guarantee No. _____ in your favour for account of _____

_____ (The Agency) in cover of performance guarantee in accordance with the terms and conditions of the Work Order/ Sanction Order.

Hereby, we undertake to pay up to but not exceeding _____ (say _____ _____ only) upon receipt by us of your first written demand accompanied by your declaration stating that the amount claimed is due by reason of the Agency having failed to perform the Work Order/ Sanction Order and despite any contestation on the part of above named-agency.

This letter of Guarantee will expire on _____ including 90 days of claim period and any claims made hereunder must be received by us on or before expiry date after which date this Letter of Guarantee will become of no effect whatsoever whether returned to us or not.

_____

Authorized signature

Chief Manager/ Manager

Seal of Bank

Note: PBG shall be valid till completion of 5 years' O&M period plus 3 months' claim period.

Annexure-X

POWER OF ATTTORNEY

(To be executed on Non-Judicial Rs.100 Stamp paper)

Power of Attorney to be provided by the Bidding Company in favour of its representative as evidence of authorized signatory's authority.

Know all men by these presents, We _____ (name and address of the registered office of the Bidding Company as applicable) do hereby constitute, appoint and authorize Mr./Ms._____ (name & residential address) who is presently employed with us and holding the position of …… as our true and lawful attorney, to do in our name and on our behalf, all such acts, deeds and things necessary in connection with or incidental to submission of our Bid for Installation of Grid connected Rooftop Solar PV Power Plants in Goa for Goa Energy Development Agency in response to the NIT No…….. dated ……. issued by Goa Energy Development Agency (GEDA), Panaji including signing and submission of the Bid and all other documents related to the Bid, including but not limited to undertakings, letters, certificates, acceptances, clarifications, guarantees or any other document which GEDA may require us to submit. The aforesaid Attorney is further authorized for making representations to Goa Energy Development Agency, Panaji and representing us in all matters before GEDA, Panaji and generally dealing with GEDA, Panaji in all matters in connection with Bid till the completion of the bidding process as per the terms of the above mentioned NIT.

We hereby agree to ratify all acts, deeds and things done by our said attorney pursuant to this Power of Attorney and that all acts, deeds and things done by our aforesaid attorney shall be binding on us and shall always be deemed to have been done by us.

All the terms used herein but not defined shall have the meaning ascribed to such terms under the NIT.

Signed by the within named

_____(Insert the name of the executants company)
through the hand of Mr. _____duly authorized by the Board to issue such Power of Attorney Dated this _____day of _____Accepted_____

Signature of Attorney

(Name, designation and address of the Attorney)
Attested

(Signature of the executant)
(Name, designation and address of the executant)

Signature and stamp of Notary of the place of execution

Common seal of …… has been affixed in my/our presence pursuant to Board of Director's

Resolution dated……

WITNESS

1. ……..

(Signature)
Name
Designation

2. ……...
(Signature)
Name……
Designation

Notes:
The mode of execution of the power of attorney should be in accordance with the procedure, if any, laid down by the applicable law and the charter documents of the executants (s) and the same should be under common seal of the executants affixed in accordance with the applicable procedure. Further, the person whose signatures are to be provided on the power of attorney shall be duly authorized by the executants (s) in this regard.

The person authorized under this Power of Attorney, in the case of the Bidding Company / Lead Member being a public company, or a private company which is a subsidiary of a public company, in terms of the Companies Act, 1956, with a paid up share capital of more than Rupees Five crores, should be the Managing Director / whole time director/manager appointed under section 269 of the Companies Act, 1956. In all other cases the person authorized should be a director duly authorized by a board resolution duly passed by the Company.

Also, wherever required, the executants (s) should submit for verification the extract of the chartered documents and documents such as a Board resolution / power of attorney, in favour of the person executing this power of attorney for delegation of power hereunder on behalf of the executants (s).

- ***In case bidder is the Sole Proprietor of the Firm, he has to submit the proprietorship certificate or an affidavit on Non-Judicial Rs.100 Stamp paper stating that he is the sole proprietor of the firm and is authorized for signing the tender documents.***

Annexure-XI

COMMITMENT FROM THE BIDDER

(To be submitted on Company's letter head duly signed)

We hereby confirm that the proposed aggregated capacity of 1200kWp Grid Connected Solar Rooftop PV Power Plant at North Goa & South Goa District Hospital, Goa, will provide the assured generation of 1450 kWh per kWp per annum at each site location which will be recorded in the Energy Meter.

However, for five years from the date of installation of Net meter we hereby commit to pay GEDA an amount of Rs.5/- per kWh as compensation, for the amount of deficit kWh against the guaranteed total amount of units to be generated. If not paid by us than the GEDA can recover the said amount from PBG.

(Signature of Authorized Signatory)
Name:
Designation :
Seal:

Annexure-XII

TECHNICAL BID

(To be submitted on Company's letter head duly signed)

(To be submitted through Online)

Tender No: _____ dated: _____

Installation of aggregated capacity of 1200kWp Grid Connected Solar Rooftop PV Power Plant including Operation and Maintenance for 5 years at North Goa & South Goa District Hospital, Goa.

We confirm the technical specification of Items that will be used for Installation & Commissioning of the grid connected Rooftop Solar PV power project are as bid specified in tender Documents.

(AUTHORIZED SIGNATORY)
NAME:
SEAL:

Annexure-XIII

FINANCIAL BID

(To be submitted through Online)

Tender No: _____ dated: _____

Installation of aggregated capacity of 1200kWp Grid Connected Solar Rooftop PV Power Plant including Operation and Maintenance for 5 years at North Goa & South Goa District Hospital, Goa.

S. No	Particular	Quantity (Nos.)	Unit Cost (Rs.)	Sub Total (Rs.)	GST Amount (Rs.)	Total Cost inclusive of GST (Rs.)
1	North Goa District Hospital, Mapusa, Bardez, Goa.	01				
2	600kW at Hospicio South Goa District Hospital, Margao, Salcete, Goa.	01				
	Grand Total					

- *12% GST on the 70% of the unit cost and 18% GST on 30% of the unit cost for the installation of solar power plant*

Rupees (in Words) _____

(AUTHORIZED SIGNATORY)
NAME:
SEAL:

Annexure-XIV

BILL OF MATERIAL

(To be submitted on Company's letter head duly signed for each site location separately)

Sr. No.	REQUIREMENT	MAKE, MODEL, No of items,
1.	Solar PV panels	
2.	Solar Inverter	
3.	SPV module mounting structure	
4.	ACDB	
5.	DC DB	
6.	Remote Monitoring	
7.	Lightning arrester	
8.	Earthing kit	
9.	Cables	
	a) DC	
	b) AC	
10.	Walk way	
11.	Energy meters	

(Signature of Bidder with Seal)

Annexure-XV

CHECK LIST

(To be submitted on Company's letter head duly signed)

Sr. No.	Particulars / Bid Enclosure	Uploaded Document Yes/No
1	Tender Document Fee	
2	Earnest Money Deposit (EMD)	
3	Bid Processing Fee	
4	Declaration by bidder as per Annexure-I	
5	Covering Letter as per Annexure-II	
6	General Particulars of Bidder as per Annexure-III	
7	Letter for Submission of Bid as per Annexure-IV	
8	Bidders General Details as per Annexure-V	
9	Letter of Transmittal as per Annexure-VI	
10	Financial Eligibility Criteria as per Annexure-VII	
12	Work Experience along with Copy of Work Orders as per Annexure-VIII	
13	Power of Attorney along with Board Resolution from company for signing the Tender document on behalf of company with seal as per Annexure-X	
14	Bidder's undertaking towards not being blacklisted as per Annexure-XI	
15	Bill of Material as per Annexure-XIV	
16	Test Certificates / Reports for Module and Solar Inverter	
17	Duly signed & stamp in all pages of Tender document	

(Signature of Bidder with Seal)

Annexure-XVI

SITE VISIT REPORT FOR THE SOLAR PV POWER PLANT INSTALLED AT……..
(To be furnished in triplicate by the Supplier in presence of End User)

Date: ……

1. Visual damage of all Components / Equipment / Items in PV Power Plant:

   Have you seen any? Pl. mention if any

2. Damage of the module:
   Sl. No. & Make of the damaged module

3. Cleaning status of PV Modules :

4. Looseness of PV Modules (Pl. mention, if any) :

5. Suggestions given to the End User :

6. Readings of the Solar Power Generation:

No. of Inverter	1	2
Units Generated by Inverter in kWh		
Units measured at Energy Meter (Solar) in kWh		

7. Status of the entire PV Power Plant system :

8. Remarks of the End User :

Representative of Supplier

Name :
Designation :

Signature of the Representative of End User

Name :
Designation :

Annexure-XVII

QUARTERLY SOLAR PV POWER PLANT STATUS REPORT

(To be furnished in triplicate by the Supplier in presence of End User on quarterly basis by assessing site conditions)

Date: ……

A. PARTICULARS:

1. Place of installation_____
2. Address _____
3. City/District/State _____
4. Date of visit _____
5. Name &contact no. of the visiting staff (Contractor &End User) .....

B. OBSERVATIONS:(To be filled-in by staff visiting the installation)

9. Visual damage of all Components / Equipment / Items in PV Power Plant:

   Have you seen any? Pl. mention if any

10. Damage of the module:
    Sl. No. & Make of the damaged module

11. Cleaning status of PV Modules

12. Looseness of PV Modules (Pl. mention, if any)

13. Tightness of Nuts, bolts, of Module Mounting Structures

14. Any cables found lying on the ground, or inside conductors of cables found exposed or in open

15. Tightening of the all electrical connections

16. Open Circuit voltages at AJB / MJB boxes (Matching with earlier commissioned time vales)

17. Grounding / Earthing of all systems .....

18. Staff Training (General, Technical, Safety) Records and cross questioning the trained staff

19. Verification of Daily Power Generation, PLF, PR, CUF

20. Verification of Preventive Maintenance Records .....

21. Verification of Breakdown Maintenance Records.....
    (Were all breakdowns resolved within 48 hours of reporting by the End User? If not, mention such instances with details)

22. Checking of Spares and Consumables availability

23. Any Safety Issue / Concern of PV Power Plant:

24. Suggestions given to the End User

25. Status of the entire PV Power Plant system

26. Remarks of the End User

Signature of the Representative of Supplier

Name

Designation

Signature of the Representative of End User

Name

Designation